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VOLUME 5. MONTHLY MAGAZINE.

SEPTEMBER, 1880.

EVERY SEASON has its pleasures and its duties. The summer is almost gone, but the gardens are yet gay with bright foliage and still brighter flowers. September is the most enjoyable of all the American summer months. The sun has lost its fierceness, and the heat is not oppressive. A walk in the garden is pleasant, save, perhaps, for an hour or two occasionally in the middle of the day. The annuals have attained their full growth and cover the entire beds; the Asters and Phloxes are in their glory, now that the nights are cool and the flowers receiving a daily baptism of dew, and are no mean rivals for the honors claimed by the bedding plants. The Gladioli and Dahlias and Tuberoses are in their best estate, the Cannas are showing their bright flowers and an occasional seed-pod, the curious seed vessels of the Ricinus light up its large, handsome leaves, while the giant foliage of the Caladium seems to grow larger and handsomer every time we look upon them. There is a richness, a fullness and a completeness about the garden in September, and also a quietness wonderfully soothing to tired nerves. The atmosphere is in sympathy with the garden, and puts on a gauzy veil that softens the sunshine and mellows the landscape.

In May, all is push and activity—every plant seems to be doing its best, in the struggle of life; in September, the season's work is done, and well done—the strife is over, and all is

quiet and contentment. Many a half-dreamy hour have we spent in the garden in this pleasant month, and once, whether awake or asleep, or dreaming, or all together, we cannot say, a fairy or a flower-spirit sang sweetly—

“ See how nobly we have done;
See how we have worked and won.
All too soon, alas, we part;
Sad, and with a heavy heart,
We leave with many a tear,
Never fear—never fear—”

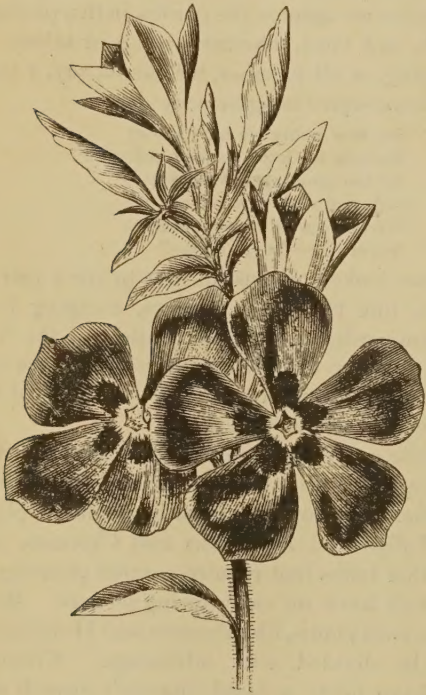
And we looked up just in time to see a pair of wings, like two large Pansies, escaping from the summer-house, but the drapery of the Virginia Creeper obstructed our vision, so we saw nothing more, and only heard the song of the Oriole in the Cherry trees.

While enjoying the pleasures, however, let us not forget the duties of this first of the autumn months. Preparations must be made for planting Tulips and Hyacinths and Crocuses, and the other bulbs that require autumn planting, or we shall have no early spring flowers. Many herbaceous plants, like Pæonies and Hollyhocks, may be divided with advantage. Climbers that have made a rapid summer's growth may need securing to trellis or wall, to prevent injury from winter's storms, and any changes in walks or beds can be made usually better in the early autumn than at any other season, while for sowing Grass seed for lawns, September is the best month in the whole year.

PHLOX DRUMMONDII.

It seems hardly possible that the world ever did or could get along without the Phlox Drummondii, and yet we remember when the Phlox was not seen in our gardens and even its existence was unknown. This Phlox was first discovered in 1835, in Texas, by DRUMMOND, a botanical collector sent out by the Glasgow Botanical Society, and it is one of the last plants, if not the very last, sent to Europe by that enthusiastic lover of nature. Soon after, Mr. DRUMMOND went to Cuba, where he died of a fever, in the prime of life. Sir W. J. HOOKER named the plant after the lamented gentleman, "that it might serve as a frequent memento to its unfortunate discoverer." The word Phlox signifies flame, and is supposed to have been applied in allusion to the flame-like form of the bud.

When first discovered, the Phlox was quite inferior in color and form to the flowers seen in our gardens to-day, and to give our readers some idea of the improvement made, we present an engraving of the Phlox taken from a drawing we have in our possession, which was made in 1838, three years after its discovery.



By comparing this with our colored plate, it will be seen that it has been greatly improved in size and form. The improvement in color, however, is equally great.

The colored plate shows a few varieties selected from our grounds the present season, and

are only a few of the many excellent varieties now in cultivation. We know of no annual that will make such a fine ribbon bed, and for this purpose it is excelled by few of the popular bedding plants. A deep red variety, with white and purple and pink, will give a ribbon bed



that all must admire, for the plants are of uniform height, bloom abundantly and all through the summer, and thus furnish permanent and unbroken masses of color. In our grounds we have nothing so gloriously brilliant as our acres of Phloxes. The next in brilliancy is the Verbena.

For some years we have hoped to produce a good double Phlox, and have had several plants that gave fine double flowers, but have never found any to reproduce double flowers from seed with certainty, except a white variety. Among the many new sorts we have produced is one deep red, with a fringed edge. During the past ten years we have grown many very marked flowers, but in almost every case the beauty of the flower has been secured at the expense of the constitution of the plant—a new and elegant flower, and a sickly, dying plant. The same is true of many new varieties advertised in Europe as of great excellence, and which on trial prove entirely unreliable, while others are useless for our climate because unable to bear our hot summer sun. We have, however, many choice varieties that are at once beautiful and robust, so we will enjoy what we have and not mourn over the unattainable.

Sow seed of the Phlox in the early spring in a hot-bed or a nicely prepared bed in the garden, and transplant into the flowering beds, according to any desired pattern. Seeds sown in the autumn will produce early plants, if sown so late that they will not germinate until spring; but if sown early, so that the seed germinates in the autumn, the young plants will be destroyed by frost in winter. In the South seed can be sown in the fall with perfect success.

INSECT ENEMIES OF THE STRAWBERRY.

Forewarned is forearmed; consequently, we say to those who for the first time are attempting the culture of the Strawberry, either for home use or for market, be sure and make a thorough preparation of the soil before planting. This will be one of the most certain means of avoiding troublesome insects; but it will also be the means of doubling or trebling the crop.

In "Success with small Fruits" we find the following statements: "If ground is in condition to give a good crop of Corn, it will also give a fair crop of berries. If the garden is so far "subdued" as to yield kitchen vegetables, the Strawberry may be planted at once, with the prospect of excellent returns, unless proper culture is neglected.

"Should the reader be content with mediocrity, there is scarcely anything to be said where the conditions are so favorable. But suppose one is not content with mediocrity. Then this highly favored soil is but the vantage-ground from which skill enters upon a course of thorough preparation and high culture. A man may plow, harrow and set with Strawberries the land that was planted the previous year in Corn, and probably receive a remunerative return, with little more trouble or cost than was expended on the Corn. Or, he may select half the area that was in Corn, plow it deeply in October, and if he detects traces of the White Grub, cross-plow it again just as the ground is beginning to freeze. Early in the spring he can cover the surface with some fertilizer—there is nothing better than a rotted compost of muck and barn-yard manure—at the proportion of forty or fifty tons to the acre. Plow and cross-plow again, and in each instance let the first team be followed by a subsoil or lifting plow, which stirs and loosens the substratum without bringing it to the surface. The half of the field prepared in such a thorough manner will probably yield three times the amount of fruit that could be gathered from the whole area under ordinary treatment, and if the right varieties are grown, and a good market is within reach, the money received will be in a higher ratio."

In reference to the insects that attack the Strawberry plant, we can give our readers no better information than by republishing an article on this subject from the pen of A. S. FULLER that was read before the New Jersey State Horticultural Society, and published in a late number of the *American Entomologist*.

"Among the insect enemies of the Straw-

berry, the common White Grub is probably one of the most destructive. It is the larva of the May-beetle, June-bug, or Dorbug—being known by all these names in different parts of the country. There are over fifty distinct species of May-beetles found in this country north of Mexico, but the one here referred to is our most common brown May-beetle, the *Lachnosterna fusca* of FROEHLICH. These beetles frequent meadows, pastures, and uncultivated fields, for the purpose of depositing their eggs in places where their young will be sure of plenty of food, and not likely to be disturbed. The young grubs as soon as hatched commence feeding upon the roots of various plants, those



FIG. 1. STRAWBERRY WORM.

1. Ventral view of pupa; 2, side view of same; 3, enlarged sketch of perfect fly, the wings on one side detached; 4, larva crawling, natural size; 5, perfect fly, natural size; 6, larva at rest; 7, cocoon; 8, enlarged antenna, showing joints; 9, enlarged egg (after Riley.)

of the Strawberry and different kinds of Grasses being preferred to the weeds. These grubs live three years before passing through the pupa state and coming forth as beetles. During these years of constant work upon the roots of plants they may do much damage to whatever kind they may attack. Their injury to Strawberry plantations results mainly from bad management and the failure of the grower to use preventive measures. Good old pasture and meadow lands are frequently selected for Strawberry plantations, and sod is turned over, and as soon as sufficiently rotted, the plants are set out. In the meantime, the grubs that were already in the ground, and perhaps of various ages from a few weeks to a year or two, have been fasting, or making an occasional meal of the half-decayed Grass roots. Finding fresh Strawberry roots thrust before them, they commence a vig-

orous attack upon such tender food. The planter is astonished to see his Strawberries disappear, and wonders where all the grubs could have come from in so short a time.

"Now in the regions where the White Grub abounds it is not safe to set out Strawberries on freshly inverted sod; but the land should be cultivated at least two seasons in some crop requiring frequent hoeing and plowing, before using it for this purpose. Neither should the Strawberry plantation remain or be continued on the same piece of land for more than two or three years, if what is called the matted or bed system of cultivation is pursued; because the parent beetle soon learns that these weedy, little-disturbed plantations, are a safe place for her to deposit her eggs.

"To avoid injury to Strawberry plantations by this insect, use land that has been occupied at least two years in some hoed crop like Corn, Potatoes, or Beans, and then set out a new one on fresh land as soon as the old plants begin to fail.

"As all the May-beetles are nocturnal in habit many may be taken by using tubs of water with a floating light in the center. A few hundred taken every evening during the first few weeks of summer will do something toward diminishing the number of the succeeding generations in a neighborhood, but the birds and domestic fowls are the Strawberry grower's most efficient helpers in the way of destroying May-beetles and White Grubs.

"Among the various other kinds of insects injurious to the Strawberry there is perhaps none more destructive than that known as the Strawberry Worm. This pest is a small, slender, pale-green worm that attacks the leaves, eating large holes in them. When at all abundant it soon destroys the entire foliage, and of course

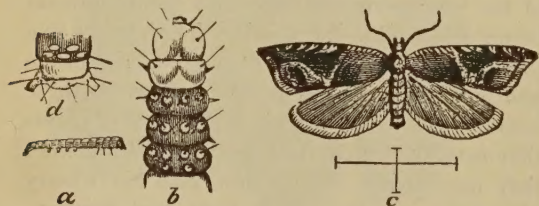


FIG. 2. STRAWBERRY LEAF-ROLLER.

a, larva, natural size; b, head and thoracic joints; d, anal joint of same; c, moth—enlarged (after Riley.)

prevents further growth of the plants. A few years ago this pest almost ruined the plants in my garden, but of late it has not been very abundant, although it has not entirely disappeared. This Strawberry Worm is the larva of a small black fly, *Emphytus maculatus*, Norton, 3 in figure 1. Dusting the leaves with lime would probably check the increase of this in-

sect. There is also another worm that attacks the leaves of the Strawberry, but this is a leaf-roller, and the caterpillar of a small, handsome moth, *Anchylopera fragariae*, Walsh and Riley, figure 2. I have not observed it in my grounds, but it is quite abundant in the western States, also in Canada, where it is occasionally very



FIG. 3. STRAWBERRY CROWN-BORER.

a, larva; b, beetle, side view; c, do. dorsal view—enlarged (after Riley.)

destructive. In addition to the above there is a small snout-beetle known as the Strawberry Crown-borer, *Tyloderma fragariae*, Riley, figure 3, that works in the crowns of plants, destroying the embryo fruit-stalks and leaves. The remedy proposed is to plow up the Strawberry plantations soon after gathering the fruit in summer, and while the little grubs are still in the crown of the plants."

OUR SCHOOL GROUNDS.

Since the commencement of this publication we have persistently pointed out to our readers the desirableness and need of beautifying the school grounds; and it is one of our cherished hopes to see the forlorn-appearing places where our children receive their education made pleasant and agreeable by the surrounding of lawns, trees, shrubs and flowers. With a heartfelt pleasure, therefore, we received the announcement that at a convention of the teachers of the State of New York, recently held in Canandaigua, besides other progressive resolutions they passed, was one to the effect that the patrons of the country schools should ornament the school rooms, and enlarge and beautify the school grounds. It is proper that this expression should emanate from the teachers, and to our minds is indicative of the final accomplishment of the object. If the teachers assist in this movement it will succeed; the rate of motion may be slow at first, but, with the progress of the enterprise, it will gain momentum until it shall have passed over our whole land, and we shall be able to point with pride to the external appearance of these modest seats of learning, as we do now to the results of the mental training there acquired.

HOUSING PLANTS.

Tender plants that, for a few months past, have been in the border, and that are intended for winter blooming, should, at the close of summer or about the first of September in the more northern States, receive attention preparatory to housing. As a rule, those plants that have flowered freely during summer will not be of much value for winter blooming, and it is not to them we would now direct attention, but to those especially intended for the window, conservatory or greenhouse. Each plant to be lifted should be cut around with a narrow, sharp spade, or some other sharp, thin tool, so as to leave a ball of earth that can be removed with the plant and placed in the pot. It will be seen that it is necessary to determine the size of the ball pretty accurately, since it is not to be reduced after removal. If there is reason to suppose that a plant has long roots running directly downwards, it will be necessary to run the spade under it and cut them off, so that there shall be no roots too long for potting. As a result of cutting about the plants, all the roots that are shortened by the operation will make numerous young rootlets, and in a fortnight these will have fully formed, and the plants will then be ready to be placed in their pots. A plant in the condition now described, if properly potted and treated, will commence an active growth, scarcely showing a sign of the change it has been subjected to. After the root-pruning process has been performed, it is time to prepare potting soil, if that mixture is not already stored away for the purpose. When access can be had to woods where leaf-mold can be procured, it should be collected as one of the most important materials for the purpose. Sharp, clean sand must be secured and some loam. If the loam can be taken just under the sod of an old pasture it is to be preferred, but, if not, it should be what a gardener or farmer would call fresh—that is, lively, and not old soil that has been run and is poor. If attention has been given in advance to secure good potting soil, probably a pile of rotted sods is at hand to furnish the necessary loam. Those who would have at command a good soil, should lay in a pile of sods every spring, piling them up grass-side down, so that the grass and roots will decay; and, to make it mellow, the pile should be turned two or three times during the summer. A mixture of equal parts of loam, leaf-mold and sand, with a small addition of old cow manure, will make a soil suitable for nearly all plants. When leaf-mold cannot be procured, its place may be taken by dried cow manure pulverized.

Having the potting material ready, and a good assortment of pots, the plants may be lifted any time before frost, and two or three weeks after the operation of cutting around them has been performed. The pots should be an inch or two larger in diameter than the balls of earth, so that from a half-inch to an inch of the prepared soil can be placed between the ball and the pot. First, place a bit of crock over the hole in the bottom of the pot, in order to keep the drainage free, and then fill in a couple of inches of soil, and upon this set the ball of earth, and then fill in the soil carefully all around, a little at a time, seeing that no vacancies are left, but gently pushing it in, when necessary, with a blunt stick, or jarring the pot sufficiently to settle it. When the potting of a plant is finished, the soil should be about half an inch below the rim, thus leaving room for water on the surface. After potting, give the plants a liberal watering and stand them in the shade, and, if possible, give them the benefit of the close, moist air of a cold-frame; but where this is not practicable, do the next best thing by placing them where they will be out of the way of any currents of air, and are somewhat shaded. They will quickly become established in their new quarters, and then may be brought fully into the light. When cold-frames can be used, the plants can be carried along in them for at least a month with the greatest benefit to them.

SEED-TIME AND HARVEST.

The good gardener has almost a continuous seed-time and a continuous harvest. What with sowing under glass and in the open ground, with propagating by cuttings and layers, and division of roots, and by budding and grafting, his seed-time lasts the year round; so, also, is there no month when he may not cull a bouquet, or furnish the table with fruit, or vegetable or a salad plant. At this time he thinks of sowing seeds of some beautiful perennials that, in the following season, will amply repay for the forethought and attention; such are *Antirrhinums* and *Pansies*, *Chinese Pinks*, *Sweet Williams*, *Lychnis*, *Aquilegias*, *Hollyhocks*, *Sweet Rockets*, and others. The seeds of all these may be sown this month in a cold-frame, or in some warm, sheltered spot in the open ground; they will soon germinate and make healthy little plants that may be carried through the winter with a slight protection. In spring they will be ready to transplant, and will start early and soon become fine flowering stocks.

When the severe weather comes, late in fall some leaves can be placed in between the rows

of plants, and for those in frames this will be sufficient protection. Those in the open ground can be treated in the same way, and, in addition, have some branches laid over the plants and leaves covered over them. The branches will hold the leaves up from the plants and prevent their getting smothered.

In the same way Lettuce and Cabbage seed may now be sown and wintered over, ready for use at the earliest opportunity in spring.

In the open garden, after having well prepared the ground by deep tillage and a generous coat of manure and thorough pulverizing, Spinach seed may be sown in rows about fifteen inches apart. Plenty of seed should be sown, so as to be sure of full rows. When the young plants are well up and growing, they can be thinned out, so that they will stand about eight inches apart; the ground should be frequently hoed and kept clean. When the coldest weather is at hand, brush should be placed over the plants, and then these covered with leaves for protection in the same manner already advised for Cabbage and Lettuce.

It is much better to prepare and plant beds of Asparagus in the fall than in the spring, as the growth is much stronger the next season. And this remark also applies to most hardy plants, such as ornamental vines and shrubs, Roses, Clematis, Virginia Creeper, Trumpet-vine, and others; also, Raspberry, Strawberry and Blackberry plants, and Grape-vines, Currant and Gooseberry bushes. Any of these, after planting, can be protected by a covering of leaves so effectually that the frost cannot throw them out of the ground or in any way injure them.

By all means, do all the work in the fall that can be as well done, and so relieve as much as possible the burden of spring-time, which is always too great.

HARDY SPRING BULBS.

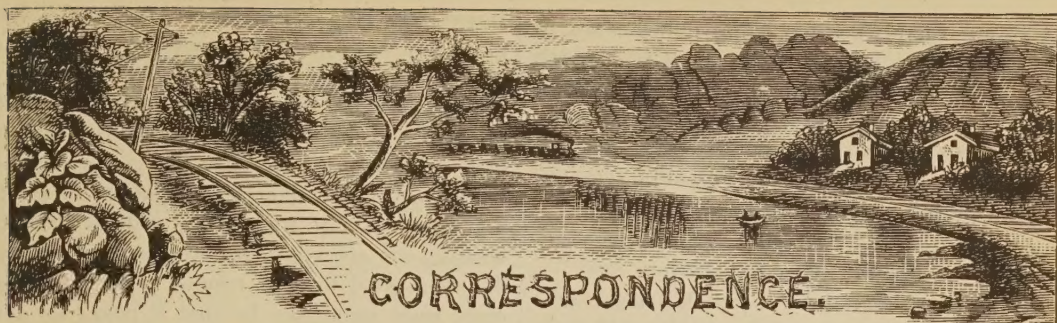
There is no season of the year with us when the garden appears so utterly forlorn as in the early spring, unless enlivened by the gay colors of the early-blooming bulbous plants. It is not strange, therefore, as increased attention is given to the adornment of the grounds about our residences, that the merits of this class of plants should be better appreciated, and more effort made to enjoy and to exhibit their charming qualities. Within a few years past there has been, and there still is, a growing tendency to place almost entire dependence upon bedding plants, and the better kinds of annuals, for the summer bloom. Excellent as are the results obtained by the free use of these plants, yet it

is not until the arrival of quite warm weather, in fact, not until the summer is fairly advancing in the northern part of the country, that our eyes are satisfied with an abundance of bloom in the garden. Without considering now how much beauty we lose the enjoyment of, in thus neglecting to give proper attention to the culture of the numberless varieties of herbaceous perennials, many of which even in the very early spring-time gladden our eyes with their exquisite flowers, we would point out, by their absence, the greater necessity of planting spring-blooming bulbous plants. Unless we make free use of bulbs, our flower gardening season in the open air is contracted to a space of time but little more than three months in duration; but with them, and with the use of some late-flowering hardy plants, the season can be extended and made to yield richly for nearly six months. When we consider the variety in style of plant, and in form, size and color of the flowers of the hardy spring-flowering bulbs, we are at once able to perceive the suitability of the material for producing the richest results in masses of colors in various combinations.

In the preparation of beds for planting Dutch bulbs, it should be remembered that only a rich soil will develop the flowers in size and number to their full capacity. The best manure for this purpose is old cow-dung; and it would be well to take a little special pains to have a supply of it for the bulb beds. When this material cannot be had, other old manure or artificial fertilizers will do. When artificial manure is used, it will be well to apply it just before planting, and, also, to use it again soon after the young plants push through the ground in the spring.

One of the greatest difficulties we labor under here, in bulb-growing, is the fierce heat of the sun; it withers the bloom far more quickly than under the softer skies of some European countries. But this effect is in a great measure due to the heating of the soil; if this can be kept equally moist and of an even low temperature, the direct action of the sun on the flowers will be of little effect. Whatever means, therefore, we can adopt to secure these desirable conditions, will be of benefit in extending the blooming season of the bulbs.

In situations where there is a plentiful supply of leaf-mold, a coat of this material an inch thick spread over the bed in spring will be of great benefit. Except that it may appear a little untidy, the short clippings of grass furnished by the lawn-mower will be of nearly equal benefit, and where sea-weed can be easily procured it will serve the same purpose. When the bloom is past, the mulching should be removed, allowing the bulbs to ripen sooner.



COBŒA SCANDENS.

The *Cobœa scandens* and its varieties form a class of magnificent conservatory climbers, of easy culture, and extremely rapid growth, with good cultivation often attaining a growth of one hundred feet with numerous branches during a single season, and they are also in all respects eminently adapted for covering both arbors and trellises in the open air during the summer months. The *Cobœa* is a native of Mexico, from which country it was introduced in 1792. It was named in honor of Bernandez Cobo, a Spanish botanist, who also wrote upon subjects of natural history about the middle of the seventeenth century. It is one of the most rapid climbers known. The flowers are large and bell-shaped, greenish at first, but rapidly changing to a dull purple. The foliage is also handsome, the leaves ending in tendrils. If the *Cobœa* is placed against a rough surface, the tendrils will catch hold of crevices, and thus support the plant without any other assistance. It can be readily and easily propagated by cuttings or layers, and by seeds, which are plentifully produced. Fine plants can easily be obtained from seed by observing the following directions. Sow from March to May in pots of well-drained, light soil, having the soil as moist as possible. Place the seed on their edges, eyes down, cover slightly, and place in a warm, but light position, where the pot will not become dry soon, as no water should be given until the young plants appear above the ground. As soon as the young plants are strong enough to handle, pot them off into three-inch pots, using ordinary potting soil; keep them close until well established, gradually expose to the open air, and plant out when all danger of frost is over, in the place prepared for them. The soil should be dug to the depth of two feet, and a good portion of well-rotted stable manure worked in where the plants are to stand, and in dry weather a thorough watering once a week will be found of great benefit to them. The seed can also be sown in the open ground after the middle of May, not sooner, with pretty fair

success, but the plants will be so late in starting that but little growth, and but few flowers, will be obtained before frost. The *Cobœa* can be propagated by layers at almost any season of the year. In layering, cut a notch near a joint, place in a pot and fill with soil, and keep the soil in the pot moist. The layer will sometimes root in two weeks, and at other times they require a month. The plants can be taken up before frost, cut back and carefully potted. Thus treated they will answer very well for the decoration of the greenhouse, or window garden, if given a rich soil and an abundance of pot room for their roots. An occasional watering of liquid manure water is of great benefit to them.

A writer on window gardening says of this plant: "The *Cobœa* is an old favorite, and it is worthy of remark that but few of the novelties introduced of late years can equal some of the old favorites that we have been accustomed to grow. The vine is named from Cobo, a Spanish priest, who first cultivated it in Mexico, where he found it growing wild and rambling in full luxuriance and beauty. The growth of the vine is very luxuriant, and it is equally easy of cultivation, the only essentials to success being warmth, a rich, light soil, and sufficient water. If allowed to become very dry it will soon wither away. It requires sun and a warm room to grow it to perfection; yet, it is not a tender plant, that is, it will live anywhere, provided the frost does not touch it, and is one of the few plants which will flourish luxuriantly in parlors lighted with gas and kept at almost fever heat. If grown in a hanging basket or pot, it must be large and the roots allowed plenty of room to spread out in. In the summer the pots can be removed from the interior room to a balcony or piazza, or plunged until they are again wanted. Then clip off the growth of branches and leaves, place the pot back again in a sunny window, where it will soon start afresh, with new arms and leaves to cover the window. It is one of the best of vines for parlor decoration, as it will drape and festoon the window, and stretch forth its tendrils, running

up even to the ceiling. The tendrils are so clinging in their nature that they will attach themselves to anything which comes within their reach—curtain cords, branches of other plants, brackets, etc.—throwing out new branches everywhere.”—CHARLES E. PARNELL, *Queens, New York.*

TREE PLANTING.

Perhaps enough in the past has been said about transplanting trees, if people would only heed it; notwithstanding, I am now tempted to give the result of my own experience. In the spring of 1871 I was intrusted with the oversight of setting something like seven hundred trees, forest and evergreen, on the estate of General WILLIAM B. HAZEN, in Portage county, Ohio. Of this number about five hundred were forest trees, comprising specimens of Maple hard and soft, Elm, Linden or Basswood, Beech, Hickory (very hard to transplant), Swamp Birch, etc. Work was commenced early in April and continued until it was completed, which occurred when the evergreens were planted, they, of course, being last on the list. Holes were dug in sufficient numbers for a day's planting, and of good size. The following day the forenoon was devoted to the removal of selected specimens, taking up as many roots, and especially fibrous ones, as possible. The trees were piled in a heap convenient to the forest road, as fast as taken from the ground, and the roots covered with moistened gunny sacks. After dinner the trees were hauled to the planting ground, and the work of putting them in position completed the same day. The roots were laid in the holes in as near a natural position as practicable, trenches being dug for the longer ones, fine earth filled in gradually and tamped quite hard, then sods, grass side down, until the space was filled. On the approach of dry weather, each tree received a rutching of straw. Less than a dozen specimens died, and most of them were the Birch, which, removed from their swampy home, evidently did not receive sufficient moisture, although quite a number of trees of this variety lived. The trees were generally selected from the skirt of the forest with a western exposure, although a number of Elms were taken from its shaded depths.

A later experience with a less number of trees and with only two varieties was had the past spring. Nine Hard Maples and one Elm were removed, the Maples from the garden of an obliging neighbor. The usual holes were dug, trees taken up with instructions to get all the roots possible. They were then planted, the fine earth being firmly tamped around the roots with a piece of scantling. A top-dressing of

leaves was given, sods put on the top of this, grass side down, and the whole covered with a layer of stones of fair size. The trees were trimmed, the top being reduced about one-half, all remaining branches being cut back. When ever a branch of any size was removed, the stump was shaven smooth and coated with grafting wax. Every tree lived, and, at present writing, all are vigorous. Some may say that this is a good deal of trouble to take, but the reply must inevitably be that it pays; for the planting of a tree, like the making of an Asparagus bed, is an act for a lifetime, and more, for we not only plant for ourselves, but for posterity. This is a truth I wish my neighbor could be made to understand, who planted trees at about the same time with roots amputated a few inches from the trunk, and with branches cut around with a knife and broken off, leaving a ragged, splintered stump an inch or two in length with no protection. How my heart ached for those poor mutilated, speechless orphans, that with proper treatment might make vigorous and lasting ornaments for the home of their adoption!—T. R. ASK, *Mantua, Ohio.*

ONLY A WEED.

It is a fact not to be ignored that more than one-half the beauties of nature are not only overlooked by us generally, but popularly condemned as nuisances, or accepted as curses upon our known disobedience to conscious duty. And this alarming state of ignorance—this saucy-independent judgment—unbecoming in men and women, is not perceived except by the few in pursuit of knowledge, happiness and comfort!

Nature, in producing her various objects under circumstances ruling each case, fails to satisfy us; and the fault is not ours! Oh, no! It is freaky nature whimsically trying our tempers and degree of patience and submission! I should particularly like to know the strict import of the indefinite term “weeds.” If a farmer finds four or five stalks of Corn growing in one hill, he very naturally plucks up one or two; not as weeds, but too much of a good thing in one place! I have found in many Corn-hills what is supposed to be a veritable “weed,” a curse to try me, for it is strongly attached to its wrong position, just as some people will be; I don't mean you or myself, of course. But the weed is pictured by the botanist to the Agricultural Bureau at Washington, in his report to the Commissioner of Agriculture, and by him called *Panicum sanguinale*. If you have the Reports you can see that he says: “In the Southern States it is well known, and is one of the chief hay crops, giving a large yield and

of an excellent quality. It is also employed for summer pastures, and answers an excellent purpose during August and September, when the Grasses of spring are old, and perhaps burned by the sun," etc.

On second thought this may be half right after all; for I well remember, nearly as dry a summer as the present one, this and kindred "weeds," by the aid of a little grain, bridged us over until foddering time in the fall, with ten head of cows and four horses; and we made good butter and kept fat horses, though the grain alone would not have done either. If I thought you did not have the reports I would send your artist a specimen plant of this—what I call Crab Grass—or some seed. If this is really an identical "weed," according to your best judgment, I will use my influence to extirpate it from off the earth—natural as it may claim to be—for I hate "weeds," because it ain't genteel to have 'em on well regulated farms.—SIGMA.

We suppose most people will continue to call Crab Grass a weed, notwithstanding the report quoted above; and a troublesome weed it is, too, in many places. But there is no doubt of its usefulness sometimes, and the practical facts in connection with it are well stated in the following quotation from Dr. DARLINGTON'S *American Weeds and Useful Plants*: "In the middle States this is a troublesome Grass in gardens, in the latter part of summer; and is frequent, also, in Indian Corn-fields—but not difficult to be kept in reasonable subjection, by the early and free use of the cultivator. Cattle will eat it, but do not appear to be particularly fond of it; and indeed it is generally choked out of good pastures by the prevalence of more acceptable Grasses. It is said to be a serious pest in the cultivated grounds of Southern planters. Mr. ELLIOTT—than whom there can be no better authority—has the following remarks on this plant: 'Grows everywhere on lands not inundated. Well known to planters under the name of Crab or Crop Grass. It is the most troublesome Grass our planters have to encounter in high ground culture, and though an annual, it is the best Grass for hay at present known in our low country.'"

RURAL NOTES.

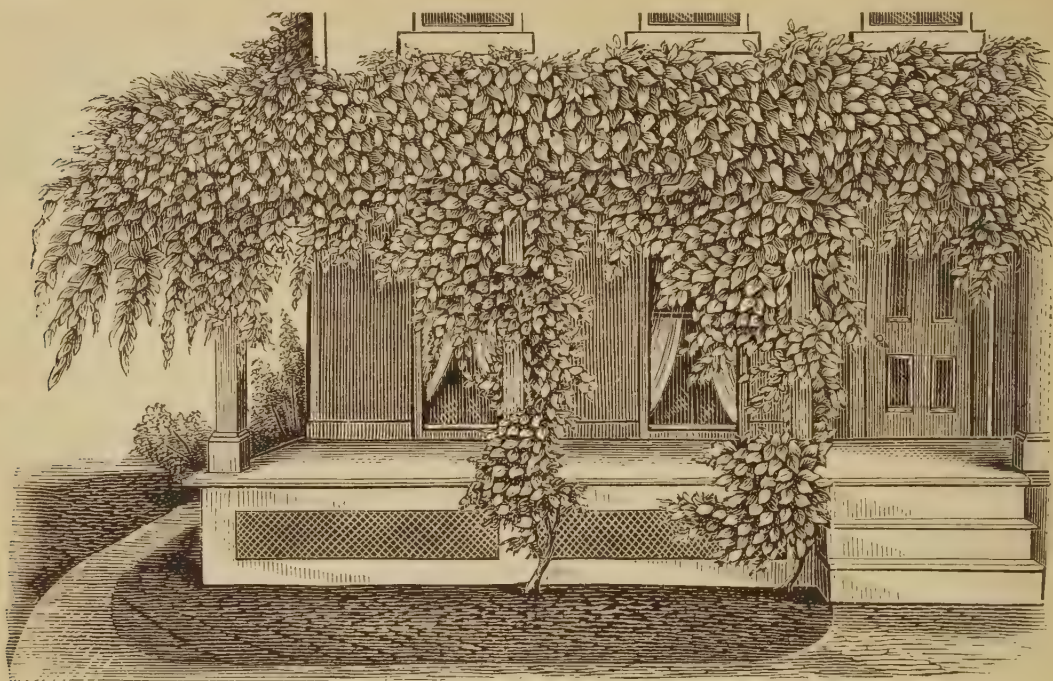
MR. VICK:—Returning from a two months' tour in New England, we find June and July MAGAZINES, which are always eagerly scanned. Noticing frequent allusions to the Lily in these numbers, we are constrained to brag a little about the *Nymphaea odorata* bulb obtained from you three years ago. It was planted in the margin of our smallest fish-pond, for, be it known to your readers, this is the only fish-breeding establishment in the State south of New York city. The bulb sent up numerous stems, and in due time the most beautiful flowers were floating upon the surface. For two years past our invited visitors have plucked nearly every flower soon after its appearance. Last fall we drew the water from our Gold-fish pond, in

the center of which is a large stump, cut off considerably below the usual level of the water. Removing most of the bulbs and roots of the Lily from the other pond, we planted them in the rich mud all around and between the roots of the stump. Their growth has been astonishing. From the top of this stump, which is entirely out of sight when the pond is filled, a stand-pipe surmounted by an "umbrella" jet-tip rises about sixteen inches above the water. A complete circle of these beautiful flowers surrounds the circular jet of water which falls into the pond. There is nothing about the premises which we so much admire, and this point being within forty feet of the principal avenue of the village, large numbers of persons stop to admire the unique little view.

Several New England gentlemen are preparing for the formation of a colony to settle in Cumberland county, in the southern part of this State, the soil being fertile and the climate the healthiest to be found in the United States. There are immense tracts of unsettled lands in South Jersey, some of which can be purchased cheap. An unusually intelligent gentleman from Northern Vermont accompanied us back to view these lands, which were entirely burned over some six weeks ago. We were surprised to find them covered with a rank growth of green Grass and other herbage, including a variety of wild flowering plants, many of which the Vermont man thought worthy of cultivation, being more beautiful than many kept by florists. The constant succession of wild flowers in South Jersey is remarkable.

We note the article on "Gold Fish Aquarium" in the June number, and will take but one material exception. Shells should never be kept in aquariums. They will collect foulness inside and retain it to a poisonous degree. The fish should be removed—with a dip-net, never with the hand—about once a month during warm weather, and placed in clean water of the same temperature as that in the aquarium, and the aquarium, gravel, &c., thoroughly cleaned. Keep plenty of water plants in the aquarium, with roots well covered in the gravel; microscopic animalcules upon which gold-fish subsist will breed upon the plants.—M. P. P., *Wenonah, N. J.*

POTATO BUGS.—After the first dressing with London Purple and plaster, I have been able to keep my Potatoes free from bugs the whole season by dusting, about once in ten days, those plants only on which larvæ were found. One pound of London Purple to a hundred pounds of plaster is plenty, and, used in this proportion, the foliage will not be injured.—H.



THE VIRGINIA CREEPER.

September! The very name suggests ripeness! How much association has to do with a name. The sun seems to cast a deep, mellow light on the distant hills; his glance has softened with age, his embrace is tenderer and more welcome. The dear old sun, how wisely and discreetly does he accommodate himself to our wishes and our moods! The Virginia Creeper shades my sitting-room window, allowing only a few rays of sunlight to dance upon the carpet at my feet; the long and graceful shoots are swaying to and fro in the breeze, getting ready to throw aside the green tints of summer and don the gorgeous garments of autumn. Beautiful vine! Not an idle moment has she spent for months; night and day the mysterious growth has been going on.

"My heart is awed within me when I think
Of the great miracle that still goes on
In silence round me."

Tendril after tendril has clung close to the house and defied every storm. The birds have found shelter for their housekeeping, and gone only to return when again the vine shall clothe my window with her bright green mantle. While others have found recreation in society, gay and festive, I have found through the warm days of August solace and comfort in the shade of my precious woodbine. It was always ready with its rich luxuriance to hold converse with me. Dear, dear friend! can it be that the melancholy air of drooping sadness, which you wear on this September day, is evidence of a consciousness that the autumn days are here,

and that each leaf and tendril feels that its days of usefulness and comfort are over? Now, leaf after leaf will soon assume beautiful tints. No artist's brush can truthfully copy them; as easily could he catch and portray the soul's emotion on gazing at their rich coloring. Our souls are too much for us; for we glow through and through with thoughts and feelings that cannot be expressed. How naturally we take from our shelves the books of poets long since gone. The musical flow of their thoughts sinks into our spirits, and every tree and flower sways and bends to the graceful rhythm, while the gentle breezes through the branches and leaves sigh a grateful requiem to their memory.

The soft, pure air, fresh from the skies which I have learned to welcome as a harbinger of health and freshening vigor, floats through the open casement, and Old Boreas alone shall force me to close my window. He is preparing even now his chilling wintry blast in the far north. I wish I could cheat him, and escape to the sunny south with the pretty birds. How easily this Virginia Creeper grows. Set a young plant in the fall close to the side or front of a porch, and see what it will do for you the very next summer. Why, you will hold your breath in astonishment at its rapid growth; it will afford in two summers a most luxuriant shade, just the place to rock the baby to sleep, for the fairies will sing a lullaby, and weary mother will almost be sorry that baby went so soon to by-lo-land, so charmed will she be by the soothing influence of the green canopy.—
M. H. S.

HOW WE EAT THE FLOWERS.

A countryman, happening to visit the city, was taken by a friend to see the tables prepared in Guildhall for a banquet. All was arranged ready for the guests and the edibles. The countryman could see nothing corresponding to these but the decorative dishes down the table centers. "Do 'em eat flowers?" he asked—eating being his sole idea, as yet, of the use and pleasure of a table.

On our modest little family breakfast table, which stands in a corner between two windows, with indirect light from each, there has stood for two or three weeks a flowering Begonia, which has furnished us with a great deal of food—for observation and conversation; and at which we shall no doubt continue to "cut and come again" with uncloyed appetite for a week or two longer. But there is a Fuchsia outside on a porch seat, putting on its most winning looks, waiting to be taken in.

This Begonia makes itself so comfortable with us, and is covered ceaselessly with bright smiles, as if perfectly happy in the notice taken of it. Its satiny leaves are all lustrous, and cymes of shaded pink blossoms keep "a blowing and a growing" so as to show new features every day. It even stretches out a branch towards each seat, as if sympathizing with our talk.

All these tokens of contentful happiness and enjoyment seem reflected in the children's faces. Each claims a branch, and has it marked by a colored shred. MARY first found out the curious circumstance that the Begonia bears two sorts of flowers; and when Papa explained to the interested circle that the three-winged appendage on the back of the larger flowers was a cradle for the seed to grow in, WILLIE said that was a squaw carrying her cradle on her back. But LU doesn't like the word squaw. She calls that the "mother flower," and shows how it has more adornment than the plain "father flowers," which dress with fewer pieces and less finery. AMY says all Begonias are not as good tempered as ours. Her aunt's gets quite cross and pouty. If the leaves get wet, or even if they touch one another, they soon begin to look black as if hurt and soured.

Upon this, Mamma leads off in a line of ethical consideration. She sees the ground of moral sense ready for the seed of a useful lesson in conduct.

"Which Begonia," she asks, "do you like best?"

"Oh, ours, Ma! Ours, to be sure."

"Do you like it as well as WALDIE?"—the least—the baby.

"Oh, no! not quite like WALDIE, dear,"

and two or three rush to seal this declaration with kisses.

"Well," says Ma, "I see how we can keep WALDIE as good-humored, and as bright, and as pleasant-looking as our Begonia—as bright-faced always as he is now. We will just treat him as we do the Begonia."

"Oh, Ma! What—give him nothing but water, or once a week a spoonful of that ugly brown tea from the stable?"

"And keep him in one corner all the while, day and night?" asks another.

"No; that is what the Begonia likes, but WALDIE likes milk, and bread, and a bed to sleep in. But WALDIE will pout and look black and sour if teased like Aunt's Begonia. Our Begonia looks always glad, because we let it alone. We don't bend or crumple it, or worry it, or give it food that makes it sick."

JOHNNY speaks up, looking a little doubtful of what he is going to say. He maintains that he likes to see WALDIE make a face, and that he kept the whistle out of his reach this morning just to see how funny he looked when he cried.

"Does he look well then, JOHNNY?"

"Not very."

"Did you ever see little boys who looked sad all the time, as if they cried more than they smiled?"

"Yes, I know some look like that who come to school. I don't like to look at them."

"Would you like WALDIE's face to grow into that wrinkly, gloomy, soured look, like Aunt's Begonia leaves, and his voice get rough and cracked with screaming?"

"No, indeed."

"Then we will always be as pleasant-looking to our WALDIE as this bright Begonia is to us."

This ends with all crowding around the merry little one, hugging and cooing, and chattering until he feels oppressed, and begins to relent; when the fraternal mob, mindful of what Mamma has said, take off their pressure, and give baby time to gain fresh desire for another romp.

I could go on for hours telling what discoveries we have made upon this one plant, and what talks of all sorts they have led to. Its leaves and all their parts made many morning lessons and adventures; for there was a great deal of research through meadows, woods and shrubbery in the endeavor to find leaves so unequally divided by the mid-rib, or so clothed with hairs, or so stipuled and cut. Then, besides the curious flowers themselves, there was their cymic way of opening, putting their central flower foremost, like a Geranium truss, or as geese do in their migratory flight. The op-

posite arrangement, the corymb, in which, as in Verbenas and Clover, the outer circle of the head of flowers opens first, was readily found, and each morning plate was shaded by examples.

It is the "Papa" who writes this, pleased to see all this sympathy between his Olive branches and the flowers of the field, and often feeling stirred to the heart-depths while listening to the talk between the children and their wise Mama, and the surprising questions and observations which their clear, unwarped, unselfish, active thoughts give rise to. And, as to the Begonia, is it not one of God's appointed teachers? Surely, the flowers that bedeck every corner of the earth, and are brightest, though lowliest, on the storm-swept Alpine summits, where larger vegetation cannot live or endure—surely they were all given to point out the true way to happiness and a joyous future.

This Begonia has a large, tuberous root, which is swelling up above the surface. In the winter it may be kept in a nearly dark cellar, in sand, with Dahlia tubers.—PHILANTHOS.

TO STRIKE CUTTINGS.

Take a box of any handy size and three or four inches in depth. Fill the box with sand, press it down and water it, and then place the box in a partially shaded place, near a bush, tree or fence. If this should be done about the first of June, at that time in this part of the country it will be found that nearly all of the shrubs will have made wood that will strike readily. Having removed a young shoot, first cut away the soft terminal end, and then make the rest of it into short cuttings of about three or four buds each, leaving about two leaves on the upper end of a cutting and removing those below. Insert these cuttings in the box of moist sand. This half hard wood of many shrubs will quickly root; we would mention especially Spiræas, Deutzias, Althæas, Weigelas and Roses. Besides these, cuttings of Geraniums, Fuchsias, Begonias, Heliotropes, &c., may be made at that time, and will root with great certainty. Any time during the summer, cuttings of soft-wooded plants, like Geraniums, Coleus and Achyranthos, may be inserted in the garden beds or borders, fully exposed to the sun, and will root in a short time. It is best to put the cuttings in on a day that is a little damp, but, if it is not convenient to wait, they can be put in in bright weather, toward evening, and then have a watering, and for a day or two be shaded with a newspaper, and then be left quite exposed.

Any one wishing young plants for winter blooming, or for keeping over for another

spring, may take shallow boxes, as mentioned before, any time in the summer, and fill with a mixture of sand and soil, and in this place the cuttings and give a watering. The box can be kept in the shade for a few days, and afterwards brought out into the full sun; water occasionally as the young plants appear to demand it. After the cuttings have struck root, they may be potted off singly and brought along in the cold-frame for winter, or they may be kept in the cutting box until mid-winter, and then be potted off and grown for spring use.—R. G.

FUCHSIA RACEMOSA.

Fuchsias planted out in this climate require a partly shaded place, but the variety bearing the above name will stand the hot, mid-day sun of our summers. This variety is quite different from all others in flower as well as in foliage.



The flowers are of a bright orange-scarlet color, from two to three inches long, growing from the top of every branch in graceful, drooping racemes; from which habit the plant has received its distinctive name. The leaves are of a metallic green color, veined with crimson, and a soft, velvety lustre. It is of a branching habit, and may be grown either as a pot plant or a bedder; in either case, with sunshine or shade, no Fuchsia will give more satisfaction and pleasure. When growing, the plant should be given a liberal supply of water, and unless the soil is quite rich, it will be benefited by an occasional application of weak manure water, when in bloom. As a winter flowering variety, it cannot be excelled.—C. M.



CARROTS FOR COMPETITION.

Fine specimens of vegetables or fruit grown in any way that is impracticable for a general crop ought not to be allowed in competition at our fairs and shows. The great value of a fine exhibition of garden or field products depends upon its demonstration of the worth of the method, or methods, employed in producing it. This fact should always be kept in mind by examining committees, and when any entries are made of articles grown under conditions not available in general cultivation, they should be ruled out of competition. In that case, there would probably be but little inducement to adopt the following English method. After the land is well prepared by deep trenching, or plowing, and thorough manuring, a hole is made with a crowbar, from twelve to fourteen inches deep, and filled to the top with finely sifted, rich compost. Three or four seeds are planted at each hole, and when the young plants are up and beginning to push, they are thinned out, leaving only one, the most vigorous, to each hole. "In this way the Carrot fills the hole, and is, moreover, kept straight, and well fed in its early growth. Now, although this is a troublesome way of growing Carrots, it is a sure way to get the largest roots, and is akin to the tricks tried on Cucumbers when grown in glass tubes, and on Gooseberries when grown under cover, and only three or four on a bush."

THE OENOTHERAS.

A correspondent of the *Journal of Horticulture* calls attention to the Evening Primroses as valuable herbaceous plants, and, as we can fully endorse his opinion of them, we lay it before our readers. Of *Oenothera Veitchii*, he says: "This is a beautiful, little, yellow, dwarf annual that handsomely peeps out of the shrubbery or herbaceous border from between green foliage, the soft yellow color contrasting with almost any other. The flower is much smaller than *O. macrocarpa*, but many would think this a commendation. I find it most floriferous when the soil is somewhat dry, sandy and poor-

ish; meaning not too much so. When the question now is constantly asked, What herbaceous plants can I readily grow? I would like to say a word for the Evening Primrose family, not the least desirable of which I consider this little favorite. The cheapness of many of those hardy annuals, I am afraid, makes them less appreciated than they deserve." The Evening Primroses being strictly American plants and adapted to our peculiarities of soil and climate, it is not too much to hope that they may be so modified by the florist's care as to have their natural charms enhanced in various ways, particularly as they have already shown themselves susceptible of such change.

TREE ROSES.

Tree or Standard Roses were never adapted either to a warm or a cold country, and never beautiful anywhere. We were rather surprised to find them so common, and apparently so popular, in Europe eight or ten years since. The last severe winter in England is teaching the people a lesson that good taste failed to do. A correspondent of *The Garden* says that "ugliness sometimes accompanies other undesirable qualities;" tenderness in this case is united with ugliness, for while Standard Roses were killed the last winter, those on their own roots or worked very low, were saved. "The Roses of the future are the Roses on their own roots. So grown, even the Teas are breaking up from roots apparently killed."

PEAS IN SUCCESSION.—A kitchen gardener, writing to the *Journal of Horticulture* about the 20th of July, gives the information that he has been gathering Peas from the same rows for five weeks. "As soon as the first few blooms were open the plants were topped, which caused lateral growths to issue from bottom to top of each stem, and these are now blooming and fruiting most abundantly—in fact, the crop is much larger than from the first main stems." This practice, he remarks, will, in good soil, more than double the produce.

ALNWICK CASTLE.

Among the many relics of England's greatness in "ye ancient times" yet remaining in good order, is the fine old baronial residence of the Dukes of Northumberland. Situated toward the northern border of England, it withstood many a contest between the sturdy Britons and the equally stalwart Scots, in days gone by, when every duke or chieftain reigned supreme over his own domain. The town of Alnwick in which the castle and grounds are situated, is a sleepy little place of some eight thousand inhabitants. It is one of those country towns that do not grow, but is gradually being ab-

remnant of the high wall that once surrounded the town. A few rods further brings us in front of the castle walls, with its strongly built gateway and loophole windows, while the walls and turrets are surmounted with large figures of warriors in various attitudes. Passing into the courtyard, the surrounding high stone walls, weather beaten with age, the sombre towers, and plain grass plat, with neither shrub nor tree to break the monotony, gives the place an air of weird lonesomeness, and it was with feelings of relief we followed our guide up a narrow, circular flight of stone stairs and stood within the battlements of one of the towers. Now,



sorbed by the princely estate in its midst. This process of absorption is singular enough to an American. For instance, a farmer who owns a freehold in the neighborhood of the castle grounds, proposes to sell out; the cause may be embarrassment, sickness, or a desire to emigrate. The day of sale arrives, and if the duke has coveted that particular farm, his stewards are on hand prepared to overbid all bidders, which is well enough, perhaps; but when this property is once added and given over to the estate, by the law of entail it cannot again be put into the market, and remains as entailed estate to be handed down to the next heir at law.

As we approach the castle, we pass through an ancient gateway of massive stone, the only

indeed, the scenery was magnificent. "As far as the eye can reach on every side," said our conductor, "is owned by the duke, with the exception of some of the town property." It certainly was a grand estate to look upon. The River Alne flows gently by on the north, through a vale of fine woodland and farms, and empties into the ocean at Alnmouth, two miles to the east, while on the north side of the river hundreds of acres have been devoted to park and promenade grounds, with appropriate shrubbery and magnificent clumps of Oaks, Elms and Beeches. Within the castle walls on the south side of the premises, flower beds have been laid out, and exhibit considerable wealth and skill; conservatories, graperies and a Peach wall on the east complete the picture.—J. W.

THE PELARGONIUM.

SHIRLEY HIBBERD, one of the most delightful writers on horticultural subjects in England, delivered a lecture last spring before a Pelargonium Society, in London, on the occasion of its annual exhibition. Excellent as the lecture is in every part, we can, however, only notice a thought or two in the introduction and close that we think will prove particularly interesting to our readers.

"A Pelargonium is not a Geranium, although often so called. The true Geraniums are for the most part herbaceous plants inhabiting the northern hemisphere, and the Pelargoniums are for the most part shrubby or sub-shrubby plants of the southern hemisphere. Let us for a moment wander among the pleasant slopes of Darley Dale in Derbyshire, or by the banks of the Clyde or the Calder. We shall in either case be rewarded by seeing vast sheets of the lovely meadow Crane's-bill, *Geranium pratense*, a true Geranium, and one of the sweetest flowers in the world. In the rocky recesses of Ashwood Dale, or on the banks of the "bonny Doon," we may chance to see in high summer a profusion of the Herb Robert, *Geranium Robertianum*, with pink flowers and purple leaves, a piece of true vegetable jewelry. And, once more, I invite you to an imaginary journey, and we will ride by rail from Furness to Whitehaven in order to behold on the railway bank, more especially near St. Bees, a wonderful display of the crimson Crane's-bill, *Geranium sanguineum*, which, from July to September, forms solid sheets, often of a furlong in length, of the most resplendent color. No garden coloring can even so much as suggest the power of this plant as it appears at a few places on the Cumberland coast; even the sheets of scarlet Poppies we see on badly-cultivated corn lands are as nothing compared with these masses of one of the commonest and hardiest of our wild flowers.

"Now let us fly to the other side of the globe and alight in the vicinity of the Cape of Good Hope, say on the vast desert of Karroo, where there is much sand, much sunshine, and little rain. Here, in the midst of desolation, the world is rich with flowers, for the healthy scrub that occurs in patches, glowing with many bright hues, consists in parts of wild Pelargoniums, which often take the form of miniature deciduous trees, although in the valleys nearer the coast, where more rain falls, they are evergreen bushes.

"Very different in their characters are these two tribes of plants, and they are not less different in their constitution and aspects. We may regard the Geraniums as herbs of Europe, and

the Pelargoniums as miniature trees of Africa. When we examine the flowers we find the five petals of a true Geranium of precisely the same shape and size; but the five petals of a Pelargonium are not so, for sometimes the top-most are the largest and stand apart from the rest with great dignity, like mother and father looking down upon their dutiful daughters, and in other cases they are the smallest, suggesting that the daughters have grown too fast and become unmanageable. The florists are doing their utmost to obliterate the irregularity of the petals of the Pelargonium, and in this respect to convert Pelargoniums into Geraniums, but the conversion will not be complete until much more wonderful things are accomplished. A Geranium has ten stamens, and a Pelargonium has only seven (perfect ones.) These numbers are not constant, but the exceptions are of no consequence in a general statement of the case.

"When all is said that can be said about the differences and resemblances of the several genera of Geraniaceæ, there remains only one constant and unfailing test of a true Pelargonium, and that is the nectariferous tube immediately beneath the flower, and running down one side of the flower-stalk. If you hold the pedicel up to the light, it may be discerned as giving an indication of a double flower-stalk, but when dissected with a pin or the point of a knife, it is found to proceed from the base of the largest of the green sepals, and it often appears to form a sort of digit or point in the line of the pedicel. When you have mastered this part of the story, you may cherish the idea that you know something about Pelargoniums.

"The large-flowered show varieties and the large-flowered single Zonals take the lead, and they are pleasantly followed by a crowd of Ivy-leaved, double-flowered, and variegated sorts that are useful and beautiful. The Pelargonium Society has set up a severe standard of judging, and a variety must be distinct and good to pass through the sieve. Moreover, the raising of varieties has been to a great extent reduced to scientific principles, and we obtain as a result new characters suggestive of the great extent of the field that still lies open to the adventurous spirit in cross-breeding. No one in recent years has contributed more directly towards the scientific treatment of the subject than our painstaking Treasurer, Dr. DENNY, of whose labors I propose to present a hasty sketch.

"Dr. DENNY commenced the raising of Pelargoniums in the year 1866, having in view to ascertain the influence of parentage, and thus to establish a rule for the selection of varieties for seed-bearing purposes. In raising varieties with variegated leaves, as also with distinct and

handsome flowers, he found the pollen parent exercised the greatest influence on the offspring. The foundation of his strain of circular-flowered Zonals was obtained by fertilizing the large starry flowers of Leonidas with pollen taken from the finely-formed flowers of Lord Derby. From 1871 to the present time Dr. DENNY has sent out sixty varieties, and he has in the same period raised, and flowered, and destroyed about 30,000. These figures show that when the selection is severe, and nothing is allowed to pass that is not of the highest quality, there must be 500 seedlings grown for the chance of obtaining one worth naming."

PROPAGATING FUCHSIAS.

The following method of raising young plants of Fuchsias is said to be practised by cottagers in the west of England. "In the autumn, after the frost has destroyed the foliage, the wood of the present season is cut off close to the ground, and laid like a sheaf of corn in a trench a foot deep. The bundle is covered with a few inches of soil, and here it remains until spring, when a multitude of young shoots may be seen pushing their way through. The soil is then carefully moved, and with a sharp knife a cut is made each side of a joint, and the result is rooted plants enough for the parish. The old stool throws up more vigorously than before, to be served in the same way the following autumn."

NEW SEEDS.

We have never found any seeds too new and fresh for our own use, but we have often heard the opinion expressed that old seeds of some plants were preferable. This is often remarked of Melon and Cucumber seed, but we do not know whether this view can be positively substantiated. For the production of double flowers some people prefer old seeds, claiming they get a larger proportion of double flowers from them than they do from new seeds. One who has made a practical test of this matter with seeds of the Balsam publishes a statement of his experiments in the *Revue Horticole*, with a conclusion in favor of the newest seeds.

CLEMATIS PELLIERI.—A new hybrid variety of Clematis, C. Pellieri, has been brought out this season, in France. It was raised from seed of C. erecta fertilized by C. lanuginosa. "The leaves are simple, ovate, acute; the flowers about four inches across, pale violet in color. The plant is curiously intermediate in character between its parents, and is very free flowering." It is said to last in bloom for four months.

A NEW HERBACEOUS PLANT.

Spiræa astilboides is a late acquisition from Japan. It is a herbaceous perennial plant, and quite hardy. According to the description in the *Gardener's Chronicle*, it has "the general character of Spiræa Aruncas, than which it is considerably dwarfer in stature, and much more graceful in character. The plant grows from two to three feet high, and bears divided leaves, and spicate panicles of elegant white flowers." Its specific name, astilboides, has evidently been given on account of its resemblance to Astilbe Japonica, "which it slightly exceeds in size, and rivals in the feathery elegance of its inflorescence."

FRIGHTFUL STATUES.—We have sometimes thought we had no taste for statues, and perhaps could not see, or, at least, could not appreciate, beauties that seemed to captivate other people, but which were hidden from our eyes. We are glad to find that we are not quite alone. *Vanity Fair*, speaking of a statue erected to BYRON, says: "The face is that of an inane young man, certainly not BYRON; the unfortunate poet has evidently met with an accident about the juncture of his left leg and his body, and he is suffering from baldness which he in vain endeavors to conceal by brushing a long wisp of hair over his poor pate."

DESTROYING MAY-BUG GRUBS.—The Cockchafer or May-bug grubs do a good deal of mischief to Strawberry beds by feeding on the tender roots of the plants. Mr. DUCHARTRE described to the French Horticultural Society a method of trapping them, by digging holes and filling them with rank manure. The larvæ speedily find out these congenial homes and are easily destroyed.

JUSSIEA NATANS.—This member of the *Oenothera* family is a native of the West Indies, and is a water plant. It will grow and flower freely in pots or tubs of water. It is in bloom this summer in the old Lily house at Kew, and is said to be a beautiful aquatic plant. "The blooms are large, of a bright yellow color, and suggestive of some *Oenotheras* in shape and color."

WINDOW GARDENING.—This feature of horticulture is being encouraged in London by the exhibitions of a society formed for the purpose. The President of the Society is the Dean of Westminster; and the patronage of Dukes and Duchesses, Earls and Countesses, and other of the aristocracy is with pleasure accorded.



PLEASANT GOSSIP.

AN AMATEUR'S QUERIES.

1. What is *Eucnida bartonioides*? The seed was sent me from New Zealand in a florist's packet. I never heard of it before.

2. Is salt air or limestone soil bad for Balsams? I cannot get them to grow well at all.

3. What makes the lower leaves of *Nasturtiums*, after making a good growth, turn yellow and then wither, the trouble going on to the top? They are planted in an airy, sunny window, in a large, deep box.

4. What makes Sweet Peas yellow and sickly as they come up? They are in a similar position to that of the *Nasturtiums*.

5. How should I grow *Petunias* from seed in a window?

6. When will you be tired with questions from troublesome people?—G. P., *South West Point, Anticosti*.

1. *Eucnida bartonioides* is a Loasaceous plant from Mexico. It is an annual, with very large yellow flowers, having numerous long stamens that form by their union an elegant golden crest. It is produced from seed, but its cultivation is quite difficult. It requires a dry, deep soil and a warm exposure.

2. Limestone soil we know is not objectionable to the Balsam, and we have never heard any complaints from our seaside friends about salt air in connection with this plant. In a high northern locality, as yours is, the plants need to be brought along well in the hot-bed and cold-frame, receiving two or three shifts and becoming strong, stocky plants, with abundance of roots, before being turned out; and this change should not be made until the weather is quite warm and settled.

3. It is the habit of the *Tropæolum* to ripen and lose some of its first leaves early, but if the plant is in a proper condition, and makes a vigorous growth, this feature is not very noticeable. We should judge, in the present case, that there is a poverty of soil or a lack of drainage.

4. A window-box is not a suitable place for Sweet Peas, and if the climate of Anticosti island will not admit of their out-door culture, we should give them up.

5. *Petunias* are easily raised from seed in a window box. The box should be well drained and filled with light, fresh soil. Sow the seed by scattering it on the surface, and then sift over

it a thin covering of soil or sand. Water the soil with a fine rose; and then it is a good plan to cover it with a paper to prevent evaporation. The water afterwards can be given on the paper, through which it will pass. By managing in this manner, the soil can be kept always a little damp and never be allowed to dry. The seed will vegetate promptly, and when the plants are an inch high they can be transplanted, not nearer than eight or ten inches apart, into boxes in which they are to make their growth and to bloom.

6. If our friends find any satisfaction in the replies they receive to their inquiries, we assure them we are pleased to hear from them, and happy if we can assist them in this manner.

BALSAMS.

MR. VICK:—Two years since I ordered from you some seeds of annuals, such as Balsam, Catchfly, Mignonette, Eutoca, Phlox, etc., and they have been a source of great pleasure to me since. Of my Balsam I must speak more particularly. The first year it was true to your description, but, though I had but two kinds, and they some distance apart, I last season had eight different varieties, differing in shade, compactness and hardness. The most beautiful to my eye was one large in growth, more hardy than the rest, and bearing large, Rose-like flowers, and very much like a blush Rose in color. None of my plants had any protection from the early autumn frosts, and yet the variety spoken of endured two frosts without injury, while one frost killed the others. A strange thing to me was that neither this nor any of most double Balsams had a single seed-pod, yet from the best seeds I could get from other plants all my fine varieties are reproduced this year, excepting the blush one. Can you tell me the cause of the plants not producing seed, and is it a rule for them to sport?

I have had my *Callas* in the garden this season. Is there no danger of scalding them by the use of water as described by *Ficus Elastica*, in the March number, page 87, of the *MAGAZINE*?—ROB., *St. Petersburg, Pa.*

Plants of the double Balsam produce very little seed. The best seed is raised from plants bearing single flowers fertilized with pollen from double flowers. The Balsam has been so long under cultivation, and has been crossed and recrossed so unceasingly that it sports into almost infinite varieties.

With regard to the treatment of the *Calla* al-

luded to, it should be noticed that *Ficus Elastica* states particularly that the hottest water used is not to be scalding hot. Probably a medium course, having the water of a temperature of 125° or 150° , would be the best to pursue.

LAWNS, TREES AND DOUBLE FLOWERS.

1. Can those who cultivate flowers at home double the single *Petunia* by mixing the pollen?

2. What is the best Grass for lawns, and also the best ornamental and shade trees for lawns.

3. If convenient, will you give the plan of a lawn?—*F. A. B., Exeter, Neb.*

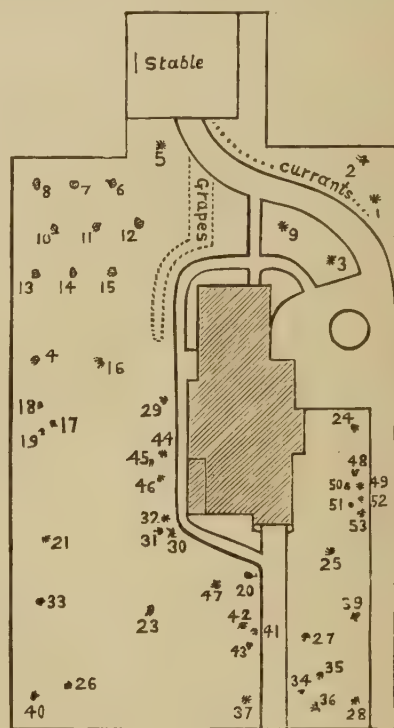
1. Double flowers are not produced by cross-fertilizing. Many plants under cultivation, and some in a wild state, show a disposition to change their stamens into petals. Florists, wishing to obtain double flowers of any kind, when they notice such a tendency, preserve the specimen exhibiting the habit, and continue to breed from it, by means of its seed, always collecting the seed from the plants having the most double flowers. A few generations frequently intensifies the desired form. A flower that has changed all of its stamens and its pistil into petals cannot produce seed, but if the pistil remain perfect, the ovules may be fertilized by pollen from another flower and seed be produced. Most flowers that are considered double are not entirely so, but have some stamens with pollen-producing anthers. The pollen from these anthers is used to fertilize good, single flowers with, and the seed thus obtained forms the supply of the trade for seeds of double flowers. We have very recently an account of a successful experiment in reversing this process, and applying pollen from single flowers to the stigmas of double flowers. *M. LEMOINE*, of Nancy, France, wished to cross some single-flowered Lilacs with pollen from a double-flowered one; but upon examination the double flowers were found to possess no stamens. He therefore decided to reverse the usual process, and applied the pollen of some single flowers to the stigmas of the double ones, and the result was that of forty plants produced from the seed, thirty of them had double or semi-double flowers, and one specimen was remarkable for its beauty.

2. The best Grass for a lawn is a skillfully prepared mixture of some of the most valuable Grasses, known in the trade as Lawn Grass. The best varieties, to be used singly for this purpose, are, Kentucky Blue Grass, *Poa pratensis*, and Red Top, *Agrostis vulgaris*.

The inquiry in relation to ornamental trees is so general, it would be difficult to reply very definitely, especially as much would depend upon the size of the grounds and upon the part

of the country where they are located. What may be adapted to one section, in a country so vast as ours, may be quite unsuitable in another. But a partial reply to the question may be found in the following remarks in reference to a plan for a lawn.

3. The arrangement and planting of one piece of ground cannot apply with any exactness to another. Therefore, in offering as we do this skeleton sketch of a place just planted in the suburbs of this city, it is not expected that any one will copy it, but it may possibly afford hints of value to some of our readers who may be working up new places.



PLAN OF GROUNDS.

1. Norway Spruce.
2. Austrian Pine.
3. Cherry, Elton,
4. " May Duke.
5. " Black Tartarian.
- 6, 7, 8, 10, 11, 12. Standard Pears.
9. German Prune.
- 13, 14, 15. Dwarf Pears.
16. Crab Apple, 'Transcendant.
17. Lilac Speciosa.
18. Syringa.
19. Laburnum.
20. Dwarf Pine.
21. Lofty Bhotan Pine.
22. Norway Spruce.
23. Yellow Wood.
24. Pyramidal Oak.
25. Cut-leaved Weeping Birch.
26. Purple-leaved Beech.
27. Irish Juniper.
28. Magnolia Lenneana.
29. Mahonia.
30. Japan Quince.

31. *Hydrangea paniculata grandiflora*.
32. *Prunus trilobata*.
33. Purple Fringe.
34. Purple-leaved Berberry.
35. *Spiræa aurea*.
36. Variegated-leaved Weigela.
37. *Magnolia Soulangeana*.
39. *Althæa*.
40. *Althæa*.
41. *Deutzia gracilis*.
42. *Spiræa Billardii*.
43. *Spiræa Thunbergii*.
44. *Cydonia Japonica umbellata*.
45. *Deutzia crenata flora pleno*.
46. *Weigela rosea*.
47. *Salisburia adiantifolia*.
48. *Spiræa prunifolia*.
49. *Deutzia candidissima*.
50. *Spiræa Douglassi*.
51. Flowering Almond.
52. *Spiræa lanceolata*.
53. *Spiræa callosa*.

The width of the piece of ground here shown is one hundred and ten feet, and the extreme length two hundred feet. The main walk, a stone flagging five feet wide, leads directly from the street to the front entrance, and from this a narrower one, being a flagging three feet wide, runs along the side and around the rear of the house, terminating at a gravelled area on the west side. The house faces the north. A drive-way eight feet wide runs along the west line of the lot, and winds off to the stable. The gravelled area previously mentioned, is for the purpose of allowing loads to be driven to an entrance to the cellar. A circular flower-bed, ten feet in diameter, ornaments the center of the area, and is in view from the street through the drive-way, as well as from the main walk. A few fruit trees and vines occupy the back part of the grounds, while all the rest is a lawn, planted with ornamental trees and shrubs, as named in the list to which the numbers in the diagram refer. A narrow bed, four feet wide, corresponding to the form of the walk at the southeast corner of the house, is intended for Roses and Lilies and other bulbous and herbaceous perennials. One end of this bed joins the Grape border. West of the Grape border is a piece of Grass used as a drying ground. The trees numbered 1, 2, 3 and 9 are intended to intercept the view of the drying ground from that direction.

The locations of flower-beds on the lawn are not shown, but those may be varied to some extent, and should be where the beds could be best seen from the windows of the house, and where they would appear to best advantage from the street; one of them is near the turn in the walk near the figure 30. It will be noticed that the planting has been so made as to allow views through the grounds in almost every direction.

ROSE GALLS.

MR. VICK:—I send a specimen of *Eglantine* very much infested with an insect which seems to threaten to destroy all the wild Roses of this section. Sweet Brier suffers much from this enemy. It does not disturb the cultivated varieties. I did not know whether it would be worth your attention, but I thought it best to send you a diseased bough, and you could decide.—A. B. S., *Canandaigua, N. Y.*

A piece of the stem of the Rose, figure 1, upon which the insect here complained of has done his work, appears as seen in the illustration. The mossy body is called the bedeguar gall, and is the work of a gall-fly called *Rhodites rosæ*. In England this gall is called the Robin-redbreast



FIG. 1.



FIG. 2.

Pincushion; it looks like a ball of moss surrounding or attached to one side of the stem. It is produced by the insect puncturing and depositing an egg in the tender bark of a young shoot; this injury to the bark, as PACKARD says, causes an "abnormal growth of the vegetable cells." First there is a firm, solid growth, forming a cavity or cell that protects the egg, and then a covering like long moss matted together. In color, these mossy hairs are, some green and some reddish. Like almost every other earthly object, this substance has been used medicinally, although it is now dropped from the materia medica.

Another insect of the same genus, *Rhodites dichlocerus*, causes the growth of hard, woody, irregular galls or swellings on the stems of Rose-bushes, such as here shown, figure 2, together with the insect about natural size.

Another species of the same genus attacks the young and tender roots of the Rose and deposits its eggs; and causing galls on the roots.

We have never known or heard of the Pincushion gall forming on plants of the cultivated Rose; it is only on the Wild Rose, as in the case offered by our correspondent. We have no idea why cultivated Roses should not suffer from the attacks of these little insects, but, as they are a prey to so many others, there certainly is reason to be thankful for this exemption.

MY GARDEN THIS SUMMER.

MR. VICK:—As others have written an account of their success, I think I may write you of mine for 1880. If you could only see my garden now, I am sure it would make your eyes sparkle and gladden your heart, for it is in a blaze of bloom just at present. Everything came up this year, except one paper of seed of *Aquilegia*. But of this I cannot complain, being too well pleased with general success. This spring has been a very good one for seeds, as it has been very wet. Still, I have heard of some complaints of seeds not coming up, but whether on account of bad seeds or bad management I do not know.

Everything in my garden just now is looking lovely, I assure you. My Dahlias are beautiful; my perennial and annual Phlox are the delight of all the passers-by; my Balsams, Petunias, Dianthus, Morning Glories, Nasturtiums, Sweet Peas, Zinnias, Verbenas, and Pansies are now just in their glory, and the Gladioli are just beginning to bloom—I have a few spikes just out.

I see in the July number of the *MAGAZINE* that Mrs. A. J. T. sends you your first summer bouquet. Now, if it were not so far from my home to your place, I would do so, and it should be a bouquet of our Iowa prairie flowers; for I am sure I could give you quite a surprise, as nobody would believe what a variety we have, unless they were to see them.

I would like to ask you if there are two kinds of the Lily Auratum. I have had one for three or four years, and it never grows above twelve or fifteen inches in height, and bears only two flowers. My neighbor has one, and it grows four feet, as high as my native Lily, and always has from five to eight blooms on it. I don't see any difference in the bloom—only the height and bearing so many more blooms.

I would like you to state to your readers how long it will take for the *Tritoma* to bloom. I have had one for three years, but there is no sign of it blooming as yet.

I hope you will give a colored plate of the Snow Plant of California, as I see by your remarks that you have a drawing of it, because there are thousands of readers of the *MAGAZINE* who will never visit California and see it in its native state, and they could take delight in looking at a colored plate of it.

I also see in your pages that lately there has been a great deal of talk about blue flowers. Now, I have all the blue flowers I want. I have not a blue Rose, nor a blue Dahlia, but I have my perennial and annual Larkspurs, and a beautiful blue they are. If the readers of the *MAGAZINE* would try a few more of these Larkspurs, I am sure they would not talk so much about blue flowers. I think they would get all the blue flowers they wanted. I am cutting bouquets of them every day.—J. B., *Decorah, Iowa*.

The Auratum is the Wild Lily of Japan, and from that country most of the bulbs are obtained. Many, no doubt, grow from dropped seed, and they differ very much in color and habit. Some have but very little red, merely a few small spots, and others have large spots and blotches of red. Some florists have taken advantage of this to give new names, even where the difference is very slight and not always permanent. Your Lily will doubtless give more flowers when the bulb becomes strong.

The *Tritoma* should flower the second summer after planting. It likes moisture, and usually does not make much growth or flower

until we get the autumn rains, especially in a dry, warm place. Give your plant plenty of water for a few weeks and see the result.

We will prepare a colored plate of the Snow Plant for a future number of the *MAGAZINE*.

CALOCHORTUS FROM UTAH.

MR. JAMES VICK:—I send you by this mail three samples of a kind of Tulip which grows wild here. It has now (June 14th) just commenced to blossom. The bulb is about the size of a Hazel nut, and lays in the ground at least to the depth of a foot. It grows in the most barren places, on dry, gravelly, clayish banks, without any sign of moisture. It is pretty, and deserves a place in the flower gardens. Last fall I planted over two dozen bulbs among my Tulips and Hyacinths, but not one of them came up. Very likely the soil was too rich and moist for them. Please let me know through your pages if it has been classified, named, etc., for I have never seen it growing in any other part of Utah, nor anywhere else.—C. D. LAB., *Uintah, Utah*.

The specimens received proved to be *Calochortus Nuttallii*. It is a beautiful flower, as are all the species of *Calochortus* from the western part of the continent. So far these bulbs have proved rather intractable under ordinary garden treatment and, consequently, their culture has made little or no progress. It appears that our correspondent had no better success with them in his garden, even in their native locality. We shall expect yet to hear that some enterprising cultivator, by a succession of seedling plants, has obtained a strain that adapts itself to the demands of the flower-grower.

EASTER LILY.

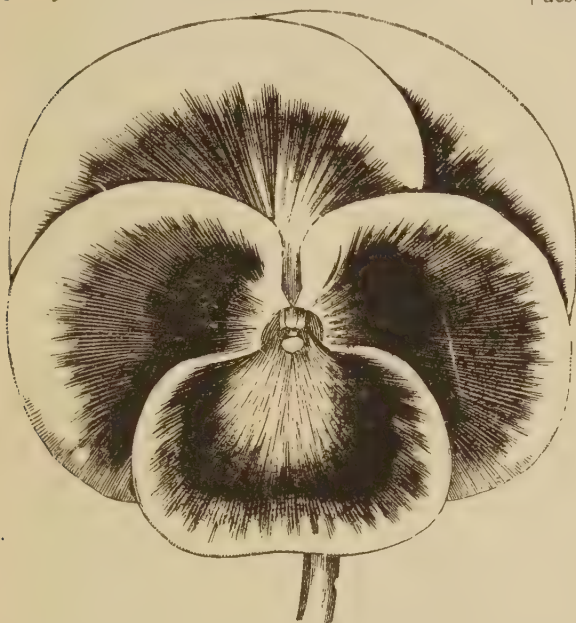
As you answer all questions so well and promptly, will you allow me to ask how to cultivate the Easter Lily. A friend sent me one, nicely growing, but I do not know how to care for it. What kind of soil does it need? Does it need to be very rich, or to be kept very dry? Shall I keep it in doors or out in summer. I cannot find it in your *MAGAZINE*, or any of your publications. I have a number of lady friends who will be glad to hear your answer.—MRS. L. N. J., *West Calais, Vt.*

The Candidum Lily is called, in most places, Easter Lily, and, in some places, the Annunciation Lily, but there are other flowers called Easter Lily. If the Candidum is the one referred to by our correspondent, it is perfectly hardy, and needs only to be planted in a good garden soil, which should be kept mellow and free from weeds, when it will increase and grow larger and better every year for several years, forming a mass or clump and giving half a dozen or more flower-stems. In this condition the Candidum Lily is beautiful indeed.

ENGLISH MAIDENHAIR FERN.—*Adiantum Capillus-veneris* has recently been found growing in great profusion in Kentucky, near Burnside's Point, in Pulaski county, on the Cumberland River, where there is a cascade.

CULTIVATION OF PANSIES.

Allow me to ask your advice relative to the cultivation of Pansies. A friend sent us some seeds of the Pansy from Paris last winter, and we hoped to have some fine ones. We grew them in pots, and in the spring planted them in well-manured ground, and pretty well shaded. They have flourished and bear flowers abundantly, but, though of brilliant colors, they are small in size. Some years ago, when I was in England, the Pansy was the favorite flower, and they were cultivated to a large size. I often received them, and dried them, and as a specimen I enclose a drawing of one. The colors were very fine also. Can you tell me of any mode of cultivation to bring forward those we have to emulate in size these old English ones? Or, do you know of such plants in this country? I should be glad to know that we could equal the foreign ones.—M., *New Jersey*.



EXACT SIZE OF ENGLISH PANSY.

After the warm weather is past, you will find that your plants will furnish much larger flowers than they are now producing. The plants raised from seed last winter were not strong enough to give good specimens after planting in the spring; but next spring they will no doubt be larger. The heat of our summers is too great for the Pansy, but in the fall and early spring it is a very satisfactory plant. Seed sown this month will make fine plants for blooming next spring. We presume many of our readers can supply blooms this fall that will measure as large as the English specimen here shown, and some of them may tell us of their mode of culture.

WOOD-LICE.—The case mentioned in our last number of injury to plants by wood-lice, it seems, is not an isolated one. A correspondent of the *Gardener's Monthly* complains of their eating plants in hot-beds, particularly Verbenas and Pansies. He states that he has used Tobacco dust, with good results, as a preventive.

A NIGHT-BLOOMING PLANT.

Rev. Dr. TALMAGE, the silver-tongued Brooklyn divine, in one of his most elaborate and flowery sermons, recently delivered, while making a comparison, mentioned that "The lovely flower of the *Nycanthes* scarcely exhales any fragrance during the day-time, but that after sunset, it emits the richest and most delicate aroma, scenting the atmosphere even at a great distance—poetically speaking:

"When the sunlight dies away,
It lets the delicious secret out
To every breeze that roams about."

Is this plant a rare exotic, and is it a perennial? What is the definition of the word "efflorescent?" Kindly enlighten several ardent lovers of floriculture in this locality, as well as myself, by giving an explicit description of this floral gem.—FLORALAND.

The plant here referred to is probably the *Nyctanthes*. A species of this plant, known as the Tree of Sadness, *N. arbor tristis*, has long been cultivated in rare hot-house collections of plants. It is a native of India, is nearly related to the *Jasmines*, and has been called the Arabian Jasmine, a name also borne by *Jasminum Sambac*, or *Nyctanthes Sambac* of some authorities. It is of a shrubby, branching character, but, under good conditions in its native localities, attains the height of a small tree. The leaves are large, oval, and with a shining, smooth surface. The flowers are borne in panicles of seven or eight, on long, hairy foot-stalks, and have long, dark orange-yellow tubes, while the expanded segments of the corolla are pure white; they emit a very fragrant odor. The flowers open in the evening, and drop off in the morning. The name, *Nyctanthes*, means night-flower. The sentiment of "timid worth" has been connected with this plant, and it is sometimes called the *Somnambulist*.

"Efflorescent" means flowering, or blooming. The efflorescence of a plant is the opening or expansion of its first flowers.

WINTER PROTECTION OF ROSES.

MR. VICK:—In my garden I have standing three Roses, viz., *Gloire de Dijon*, *Duchesse de Brabant*, and *Safrano*, all of them splendid, large bushes, and doing well. It seems to me not right to let them die, and I would like you to state the best way of keeping them over winter. Digging a trench, laying down the bushes and covering with earth until spring is one method, but is this preferable to putting a barrel or box around each bush and filling the barrel or box with leaves? Or is there a better method than either? If either of the above methods be employed, please state the best time to put them into winter quarters.—C. W., *Covington, Ky.*

A barrel around each Rose-bush, filled with leaves, we think would prove a perfect winter safeguard, anywhere in that section of the country south of the Ohio river. Less protection than would be thus afforded is often sufficient considerably further north.

LUCERNE.

MR. VICK:—I have sought in various directions for information in regard to the culture of Lucerne, but have been unable to find any one familiar with the subject. At length I have been informed that by applying to you I may probably obtain a solution of my difficulties. In the first place can Lucerne safely be sown in the fall? And next, how best can it be defended from the aggression of plants better suited than itself to our soil and climate? My first experiment with Lucerne was made on very rich ground, some three years since, but in less than a year weeds more luxuriant than itself crowded it out. I next had ground cleansed as far as practicable from all foul seed, and the Lucerne sown in May, without grain or anything else to shade or protect it. Was this right, or should I have sown it on Wheat, or with Oats? Weeds again appeared profusely as before. Annuals were subdued by the scythe, perennials by laborious weeding, but irrepressible native Grasses still remain, and before them the Lucerne is fast disappearing. It is too valuable to lose, and I wish to repeat my experiment.

By its long roots it is enabled to withstand the droughts which increase upon us every summer, and to retain its freshness when everything around it is parched and fallow. If you will please to give me the information necessary to make my next experiment a success you will greatly oblige me.—F. C. B., *Ludlowville, N. Y.*

The experience here described in raising Lucerne is a common one, and what must always be expected with this crop on land not thoroughly prepared for it. Although Lucerne is a vigorous growing plant under favorable conditions, it is quite exacting in those conditions, and cannot withstand the encroachment of weeds. The roots of Lucerne strike very deep into the ground, consequently a shallow soil is unsuited to them; a dry and deep subsoil is a necessity, and, with rare exceptions, this must be secured by underdraining and subsoiling. Experience has proved, in the older sections of the country, that a proper preparation for Lucerne can only be made by growing crops in reference to it for two or three years previously. The land for these preparatory crops should be well manured each time, and the last two should be hoed crops, so that the soil will finally be left rich and clean. Now, to fit it specially for the Lucerne, it should receive a good, liberal dressing of the best well-rotted manure, or of some good commercial fertilizer, either being destitute of weed seeds, which ordinary manure would supply. If stable manure is used, it must be thoroughly composted during the fall and winter, and turned several times, so that, when ready for use, it will cut smooth and soft. As soon as the ground is ready to work in the spring, it should be hauled and spread and immediately turned in, and then the ground should be dragged or cultivated until it is fine and mellow. If a commercial fertilizer is used, it can be sown broadcast after plowing and be mixed with the soil by the drag.

Seed at the rate of fifteen to eighteen pounds to the acre may be sown broadcast as soon as the land is ready. The seed is sometimes sown with some kinds of grain, such as Barley or Oats, but there is no advantage pecuniarily in it, and it checks the Lucerne during the whole first summer. If the seed is sown by itself it makes a quick start, and there is nothing to hinder its steady development, as there is with a grain crop. The great point to secure is a strong growth of the Lucerne before weeds begin to come, as they will with all the precautions that may be taken.

For convenience in the destruction of weeds it is well to sow Lucerne in drills, and the ground can be kept clean the first summer with the hoe and cultivator. The second summer the plants will cover the ground.

With the preparation and culture that has been described, it may be thought that clean land has been secured, and probably it has, or at least as clean as it is practicable to make it, but, in spite of all the efforts thus far, weeds will soon make their appearance after the crop is up. There is to be no delay now in exterminating them; the hoe and the hand must be employed as long as they appear. The field must be carefully worked over with the greatest diligence, and as often as necessary, until the crop fully occupies the ground to the exclusion of weeds and Grass. After mowing, the field can be run over with a light harrow to loosen up the soil; no injury of any consequence will ensue to the plants from this operation, and the effect upon their after growth will be very beneficial. Every spring, before the plants start, the field should receive a dressing of gypsum, or superphosphate, to keep up its fertility; soot is a good manure for this purpose, if it is to be had. These substances can be sowed broadcast and then the field dragged over; but this must be done very early and before the plants begin to push, or they will be torn and injured in a way that will greatly injure their growth.

TO A NIGHT-BLOOMING CACTUS.

Thou sweet-breathed flow'r, in vesture white!

Why must thou fade so soon?

Art thou a spirit, born of night,

That vanishes ere morning light

Dispels the midnight gloom?

Thou weird, white flow'r! Art thou a star,

That falling from the sky,

Did'st pale thy brightness—glory mar—

And to reclaim thy home afar

Must wither, droop, and die?

From noblest selves we've fallen too;

O, what we long to be!

Can we attain the good and true

When all our toil and suffering through,

We droop and die like thee?

LUCY WADE HERRICK.

SCALE INSECTS ON PEACH TREES.

MR. VICK :—I herewith enclose you a sprig from one of my Peach trees, covered with parasites. This sprig is a fair sample of the destruction worked and is being wrought upon all my trees. The stages of decay vary from a drooping appearance of the leaves, with black specks on both them and the fruit, which are the first signs of the work of the mischief-maker, until the limbs reach the charred and blackened condition of the one enclosed. I never saw such havoc as they are creating among my Peach trees, and how to stop it is my excuse for writing to you. I never before saw or heard of this vexation to the horticulturist, and if you cannot advise of some specific, through your excellent MAGAZINE, against the ravages of this diminutive barnacle, I am afraid I will be compelled to cut down all my trees this fall.

Under the magnifying glass, with back up, they appear for all the world like the shell of the land turtle in color, shape and roughness. With belly up, the observer sees what looks like an inanimate organism, resembling the fibers of a fine sponge, adhering to the concave center of the shell, with very delicate and numerous feelers extending in all directions. This parasite adheres to the tender limbs with as much tenacity as a barnacle to a ship. The process of destruction seems to be in extracting the sap or life-giving power from the tree. Any information you can impart to prevent their ravages will be appreciated.—SUBSCRIBER, *Wheeling, W. Va.*

This is a very bad case of attack of scale insect. For the destruction of this and other insects we have recommended the use of kerosene oil mixed with water, but from reports it appears that the oil can be used on woody plants without water. It has so been used successfully to destroy scale on Camellias, Oranges, &c., by syringing the branches and foliage with it by means of an atomizer. Of course, it would be impossible to operate on Peach trees with so small an implement as an atomizer and, therefore, recourse must be had to a good syringe with a very fine rose. We do not think it would be necessary to use the pure oil, and when so large a quantity would be required as to cover a number of Peach trees, it could be mixed half and half with water. The only difficulty in this case would be to make a mixture, since the oil rises to the top of the water. To overcome this difficulty, each time before a syringeful of the liquid is used, the syringe should be drawn full of water and then forcibly discharged into the can or pail, thus making a complete mixture; this should be repeated several times, and then a syringeful drawn and used. After the fluid has evaporated, the scales will be found dead. We are confident this treatment will be effectual; and if adopted by Subscriber, we hope to have a report of it.

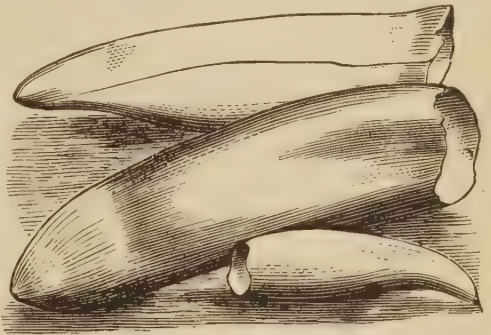
THE GREGG RASPBERRY.—The fruit of ten acres of the Gregg Raspberry, six in full bearing and four acres a partial crop, at Dayton, Ohio, this year sold for two thousand dollars. Average price, 7 3-4 cents a quart.

STRAY NOTES.

I have a lovely and unique hanging basket, whose chief beauty and attraction is the Golden Thread wound over and under and all round about the foliage plants and others contained therein. One of the foliage plants is the identical Live Forever of olden time, except that the leaf is pure white, with only a rim of green. No one seems to recognize it as the same plant, so rich and showy is it. You will see at once that it sets off my Golden Thread to advantage.

It seems that some one sends you a specimen of a white parasite, which you have engraved for us. I wish we could have all the known varieties, and some hitherto unknown, perhaps, described in your MAGAZINE.

Last spring I sent some wild Violets to an invalid friend in Boston, Mrs. Dr. B., and I append an extract from her letter to show how



ALLIGATORS' TEETH.

easy it is to give and how pleasant to receive a gift of this kind. I had sent a card stating, like the would-be artist who wrote under his picture, "This is a horse," I would explain that the contents of the package were originally wild Violets, what ever they might appear to be by the time they reached her. She replied :—"You needn't have named your gift; the darlings are quite able to speak for themselves. Your card came this noon, the box to-night. I was sorely afraid they would all be withered, but I might have known you better. They were as fresh as if you had just brought them in from their nook and handed them to me.

"It is so odd that to-day our postman brought me four boxes of wild flowers. This morning, one from Vermont, which had been out over Sunday, and, of course, were faded; and another containing alligators' teeth, from a friend in Florida. To-night, your box of Violets, and one of Trailing Arbutus from the northwest corner of Massachusetts.

"The May flowers and Violets, arranged in a glass dish with the Moss at the bottom, are beside me as I write. It seems strange that all should have met here to-night, having grown so many miles apart."—MRS. M. B. B., "*Retreat*."

GRASS IN SHADE.

Will you please tell me what kind of Grass will do best in the shade? I know that no kind will do as well in the shade, but what I want to know is what kind to sow on our cemetery lot, which is somewhat shaded by the trees on adjoining lots. Two years ago I had it graded and sown with Lawn Grass, but it did not come up and grow as I had expected. It was so thin that I sowed some White Clover seed last year, which came up pretty thick, but seemed to die out. I sowed some more this year with the same result. What shall I try next? Will Moss kill the Grass? It seems to be growing in again as it was at first. I have kept the Grass cut that it might not go to seed.—L. W. P., *Windsor Locks, Ct.*

The shade from the trees is too dense, and we should try to get neighbors to thin the trees, so as to allow the sun to fall on the ground. Orchard Grass will do better in the shade than most any other kind, but it does not make a good surface, as it grows in hummocks. If the branches of the trees can be thinned out, so as to let the sunshine on the ground, you will succeed with Lawn Grass.

MOLES IN LAWN AND GARDEN.

I am very much troubled with moles in both garden and lawn. Can you give me any method of extermination? If so, you will very much oblige me.—R. S. K., *Evanson, Ill.*

It is a settled fact that moles are the gardener's friends, and, as a rule, the benefit they confer is much greater than the damage they do. They live upon animal food, and consume great quantities of beetles, grubs and insects in other forms. In the garden we should regard them with favor. But in a lawn they might certainly prove very troublesome without being of any use; and, in this case, it is probable that some pieces of cloth or sponge, saturated with kerosene oil and placed in the runs at different points, would make it so offensive for them as to cause their departure to some more favorable hunting grounds.

THE MIDSUMMER NUMBER.

MR. VICK:—Allow one of your readers to express thanks for the treat enjoyed upon the reception of the August copy of your MAGAZINE. Its beautiful floral cover is quite a study to begin with, and so arrested the attention upon removing the wrapper that it proved difficult for a time to get any further.

The design is not only daintily exquisite and varied in conception, but perfect in execution.

Grouped amid some of our old-time friends, we fancy we recognize the *Eschscholtzia*, *Nolana*, and *Thunbergia*. We also observe that not only does the marsh contribute of its peculiar growth, but the Spider displays his handiwork, the Butterflies and Bees are flitting about, the Dragon-fly spreads his lace wings, and even

the Measure Worm, Looper, is there to report just how many square inches were required by the Messrs. WALTON and EICHORN in which to present to us so much of beauty in nature and art.

We finally turn to the frontispiece, when an exclamation escapes us of "O, how lovely!" We are enchanted with its purity and delicacy, and at once imagine it hanging in a beautiful frame on the wall. But we soon decide that the future volume cannot be thus robbed of such a gem.

As we turn on, we find too much that is rich in literary and artistic merit to be designated here, except the poem set in its floral frame—"The Orchid"—which remind us to look up the February and May numbers to show similar pages to a friend sitting by. Just perfect, they are—this trio of pages! No more fitting compliment could artist pay poet than to thus faithfully and delicately interpret the spirit of a poem. One could quite envy Mrs. C. E. FISHER, only that her poem fully deserves its setting.—B.

MANDRAKES—MAY APPLES.

The woods at this season afford few wild flowers, but Mandrakes, May Apples, *Podophyllum peltatum*, are now in perfection. A fruit with this name is mentioned in the Bible, but it is doubtful whether we have the same, or if this is the identical one alluded to. *Podophyllum* grows in rich soil, with long, running root-stocks. In the spring it bears a large white flower, nodding in the fork of its large, umbrella-like leaves. The plant is much used in medicine, and is sometimes called vegetable calomel. It is not found east of the Hudson River; at least, persons who live in that section have told me so.

I am glad one of your correspondents is calling attention to the wild flowers which are double and as perfect as he describes the *Thalictrum* to be which he possesses. Such investigations give health as well as pleasure.—A. B. S., *Canandaigua, N. Y.*

THE CABBAGE WORM.

With a view that our readers may have the privilege of testing any new method that promises to be successful in the destruction of the green Cabbage worm, we give the following statement of a writer in the *Cultivator and Country Gentleman*: "I have saved mine for two years by steeping Tansy and pouring it on after they begin to head, only two applications proving to be necessary. This season the millers commenced depositing their eggs before the Cabbages began to head, and I gave them a dose over two weeks ago, and there is no sign of any worms since."

A JUNE EXHIBITION.

It is a pleasure to receive, as we do, the reports of the doings of some of the local horticultural societies in different parts of the country. None are more gratifying than those of Montgomery county and Portage county, Ohio. At the June meeting of the Portage County Horticultural Society, held at Ravenna, there was a beautiful and attractive exhibition of flowers and Strawberries. The presence of Dr. J. A. WARDER, N. OHMER, GEORGE W. CAMPBELL, and other prominent horticulturists, was gratifying, and added much to the interest of the meeting.

A great variety of Strawberries was on exhibition, and their merits and demerits carefully considered.

The old variety, Burr's New Pine, that at one time was the most popular in cultivation, was well spoken of by Mr. DEAN, who said of it:—"I have grown this berry in my garden without intermission since 1856, and when it has had decent treatment it has always given me a large crop of its delicious fruit. I have had it beside the Wilson nearly the whole time, and it has uniformly given me the largest crop of the two—usually twice as much, or more, as it has this year—and in size it has averaged as large. There is no Strawberry with which I am acquainted that will constantly give as much fruit, with the possible exceptions of Captain Jack and Crescent Seedling."

Our older readers, especially, will be pleased to hear that Mr. BURR, who, at one time, was one of the most successful and enthusiastic of the fruit growers of Ohio, is still interested in his favorite pursuit. He is now a resident of Leavenworth, Kansas, and is eighty-two years old. Mr. DEAN read a letter that he had recently received from him, giving a history of the "Burr's New Pine" Strawberry. This variety was originated at Columbus, Ohio, in 1846—a cross between what was then known as "Burr's Seedling and the Hovey."

Dr. WARDER expressed himself highly gratified with the show of fruit and flowers. He was happy to hear from his old friend, Mr. BURR. He considers Burr's New Pine an excellent berry. "What becomes of the good Strawberries? What will become of the varieties here exhibited? We old men question if McAvoy's Superior has ever been excelled. The Russell here is not the equal of the Russell ten years ago. So of many other varieties. They have failed. Let us be thankful the Lord has given us the Rose. It belongs to an order of plants, Rosaceæ, in which there is not a single poisonous variety. The Strawberry is a Rose. Both belong to the same general class."

NELUMBIA IN NORTH CAROLINA.

A correspondent writes of *Nelumbium luteum* growing in Roanoke river, near Plymouth, North Carolina. "Looking across the river, I saw a strip of green over a mile and a half long, and perhaps one hundred feet wide, which looked not unlike a potato field in blow. Getting a canoe and going to this strip, I found the Bonnet Acorn Plant, or, as I think, the Lotus. I think even you would be surprised at the sight of them. Growing on the surface of the water were the round leaves two feet in diameter, while others not so large and of different shape were out of the water a foot or more, and all among them were flowers, buds and a few seed-pods. The flowers are about the size of a Cocoon, pure white, except a few outside petals, or sepals, which were splashed with an iron-rust color. They only partially open, and have a strong and pleasant scent, filling the air a good distance. After much hard work I managed to get four of the many thousand blooms, and one seed-pod. The leaves were easy to get, and had a stem in the center nearly seven feet long, and as limber as a string. The stalks to the flowers were about six feet long and as stiff as walking canes. They grow in about five feet of the muddy waters of the river, and are in the sunshine the whole day. It is said that they are only known in this river for a few miles and in the River Nile. Why cannot they be grown artificially, as well as other Water Lilies and aquatic plants?"

It is a mistake to think that the *Nelumbium* grows only in the Roanoke River in this country. Although comparatively scarce, it is yet found in many parts of the country, east, west and south. Twenty miles from this city, in Sodus Bay, off Lake Ontario, it grows very abundantly. It is always a very interesting plant.

BLACKBERRIES.

In this section fruit-growers report the new variety of Blackberry, Ancient Briton, to be harder than Kittatinny, and an enormous bearer. The fruit is a little later in ripening than Kittatinny; the berries are smaller than that variety, long in form, of a glossy black color, and of an exquisite, sweet, wild-wood flavor. Another new variety, the Agawam, proves to be harder, earlier and larger than Ancient Briton, very productive and of a mild, sweet flavor, all through.

The Snyder maintains its character for hardness, but is smaller and sourer than either of the above, and less productive. Where hardness must be made a prime consideration, this variety will take precedence.

FLORAL HOME.

MR. VICK:—Your MAGAZINE has been a source of great comfort, not only to me directly, but to many others indirectly. Your own experience is so valuable, and then your correspondents know something also. Let me give your readers my experience. I love flowers. I cannot help it. My dear mother loved them, and taught her boy they were the gift of our Heavenly Father to make more cheerful the pathway of life, which leads through many deserts and thorns. I love them for her sake; the ones that bloom upon her grave are the dearest on the whole green earth.

I have reason to be proud of my flowers. I plant in my best plat and nurse them tenderly, and they invariably reward me. At our country Sabbath school all summer the flowers were brought in by willing hands. Often there was scarcely room for them; for variety, the children frequently bring bouquets of prairie flowers. From the Floral Home garden, some of the finest are "ranged," as the children say, and adorn our desk and organ.

When our centennial services occurred, July 4th, there was not room for all the floral contributions, both from the garden and the prairie. They helped to make it cheerful and pleasant, and our success, we think, is largely attributable to the flowers. I know you would have gone miles to have seen us and our surroundings on that occasion. How it would please you to see the little ones, nearly all of them, coming so happy, bringing their treasure. They think they are doing something besides getting their lessons. I call them my "two-legged flowers." Thus the love of flowers as well as truth is planted and nursed.

Many visit my garden, and admiringly exclaim: "How can you spend so much time, and how do you get such a wonderful variety of form and color?" I proudly point to your MAGAZINE. Any one taking it would soon have the comfort of seeing flowers in their beauty where weeds now hold full sway.

But, not to be too long, I will only say, plant flowers, nurse them, give them away freely, love them for the giver's sake, thank God and Vick, and be happy.—A. M. E., *Ottawa, Ill.*

A LAWN PLANT.

The ideas suggested below, by a writer in the *Gardener's Monthly*, on the use of the *Alternanthera* on the lawn, are somewhat novel; and in certain places and at appropriate times may probably prove useful to some of our readers. "A carpet-like effect may be produced with the *Alternanthera* on a smooth lawn in the following manner; cut strips or figures out of the

turf any shape determined on, from three to four inches deep, and in width considerably narrower than the width of the ordinary mowing machine. The object of restricting the width of the shallow pit is, that after they are occupied by the proposed plant, the hand-mower may be forced over the lines or figures without falling into the sunken space and crushing its contents. The plants should be of good size when set in the ground, that the narrow space allotted them may soon be filled up. And in order to maintain a distinct outline, the *Alternanthera* should be planted near the sides of the pit, thus preventing encroachments from the Grass, and at the same time admitting of free growth upwardly, and inwardly toward its center. The earth in the pits, if of too close a character, should be removed to the depth of from six to twelve inches and replaced with a more open soil; otherwise, the plants might be liable to injury by water remaining around them after heavy rains.

"The lawn run all over with tortuous lines but a single plant in width, would furnish an attractive arrangement; or the decoration might be of spots and figures of small size, each figure or spot requiring from one to as many as six or eight plants.

"In a general way, the *Alternanthera* varies considerably in color, and this variation may be made use of to greatly increase effects.

"With some planning there may be several suitable styles of ornamental treatment. I have some drawings exhibiting the *Alternanthera* in the pits and the Grass on either side trimmed down by the machine to an equal height. Still another section shows a band of *Alternanthera* on the lawn, and a second band forming one of a series of ribbons of foliage plants, this latter, starting from the Grass line and being rounded upwards until it touches the adjoining ribbon. These suggestions are, of course, for the amateur; the professional gardener will follow his own fancy."

THE ONONDAGA INSECTICIDE.

This is some substance that somebody at Syracuse, in this State, is experimenting with, and promises to let the public know more about hereafter. It has just advanced to that stage where it has received a name, by which it is to be known in the world, if it shall in the future make good its present promise, which is that it is destructive to all kinds of insects that infest plants and animals, and is so offensive to rats and mice as to oblige them to seek new quarters when it is placed in their usual runs. Our readers shall have more in relation to it when more is known.



A BUSY DAY.

When our little fairy, whom we shall call Silverreen, awoke next morning after her unfortunate journey, she lay just a moment thinking how best she could make amends for the neglect of the day before, and at once resolved to send for her dearest friend, Goldinore, to assist her, so that two days' work might be crowded into one, and thus nothing should long suffer from her neglect.

So, hastily bathing and dressing, she stepped to her speaking trumpet and directed Red Spider

ance of various duties, and then hastened away to write the note to the Humming birds.

The Paper Wasp kept her supplied with delicate flakes of dove-colored paper, and the Gall-flies furnished her with nut-galls, into the juice of which she dipped a tiny porcupine quill, and soon had her note completed. Her watchful servant had pushed a Leaf-roller out of his snug nest, and brought the coiled leaf for an envelope. She tucked in her note, and sealed it with the wax from a flowering Catchfly, anxiously inquiring of Red Spider as to the



FIG. 1. MORNING GLORY.

to go without delay and bring her friend, while she proceeded to eat the breakfast he had prepared for her on the broad, flat top of a Mushroom, which always served for her table. He had sliced up a large Strawberry, and piled up the luscious pieces on a shallow, pearly shell; and had gathered the pure, white cups from a Lily of the Valley and filled them with the daintiest nectars and sweets of the season, and set them in a circle around the pearly platter. She greatly enjoyed her repast, and had scarcely finished when her friend appeared, to whom she at once gave instructions for the perform-



FIG. 2. HOP VINE.

safest and speediest way of sending it. He assured her that no way could be thought of but to send by pony express. So he soon secured a trusty horse-fly—never known to rear or balk—and putting on his gay trappings, he bestrode him and rode with speed to the castle of the Humming birds, so that they might know that the Morning Glories and Honeysuckles were almost ready for them.

When the fairy's note was received, there was great excitement in the castle. Such a fluttering and humming was never known. The flashing and glitter of so many wings made the

air seem full of "shattered rainbows." But the report which Red Spider took back must be reserved for another time.

The note being dispatched, the fairy hastened to see how Goldinore was getting on, and found that a host of wee birdies had been made very happy with their wide-open eyes; and the Rose-buds had been unrolled so tenderly that not a petal was torn, and they seemed almost quivering with sense in the bright sunshine. So she left her to finish sharpening the Rose thorns, while she went to sprinkle some silvery powder over the wings of a forlorn-looking Miller. He had been keeping untimely hours, dissipating in the glare of daylight on his return home from a general convention of Millers, where he had heard discussed the various ways and means for

coiled it up in the same way that the Cypress, Madeira and Morning Glories were twining. They wanted to pull up the Hop vine, now that this bower was to be their very own; but their mamma had asked leave to let it remain for this one summer, since the roots are already in the ground.

Then they went to the garden, where an old vine was growing, to examine that; and came back saying to each other that the Hop vines have a different way of coiling from other vines, and that this is what had been the matter. And then they seemed glad that this bit of trouble had taught them something that they otherwise should never have noticed.

"Now, this has sorely puzzled me," said Goldinore. "You know it is our business to see



THE INSECTS' INDIGNATION MEETING.

suppressing those fearful lights found every night in the habitations of Men, and which drew millions of the unwary into a burning vortex. His head was so filled with horrors that he was glad to seek the protecting shelter of his Mullein leaf.

Just then Goldinore came to report that all was done now; that she had just let all the Butterflies out of their prisons, and left them slowly waving their great, bright wings in the sun, and smoothing out the folds and wrinkles ready for flight.

But she was greatly perplexed about one thing. She had been at work near a bower composed of climbing vines, where two dear little girls were talking in such troubled tones that she had listened, and heard them complaining that the Hop vine was untwined from its cord and trailing on the ground every morning, though for a week each day they had

to such things, and I want to know what makes the Hop vines so obstinate."

"I suspect," said Silverreen, "that it is not obstinacy. I believe there is a reason for everything, whether we can understand it or not. I have known for some time that most vines have but one way of climbing; that is, they twine from left to right in crossing the front of their support (figure 1), and cannot be forced to climb in the opposite direction. But the Hop vines, in common with a few others, coil from right to left (figure 2), and they never forget or make a mistake. It is, indeed, very curious, and I, too, have been much perplexed, and do not wonder that the little girls were puzzled. Had they been in less haste to make their bower look tidy, the Hop vine would have climbed up in its own way at first. But when it was twisted up wrong it took a little time to unwind, and before it could get started right the little

girls had wound it up again. Poor Hop vine! There are other vines, like the Canary-bird vine, that cling for support by coiling their leaf-stems around whatever they can reach. If I were a little girl with plenty of time, I'd find out for myself as many of the curious habits of plants as possible.

"Some time, perhaps, you and I can make a visit to the Brownies and learn more of some-things than we know now. They are a little people who go down in the ground and look after the roots of things, and watch the little seeds and tell them when it is time to sprout and grow. They know more of the secrets of everything than we do, because they live so much at the roots of things, and learn all about their beginnings, which, I hope you are aware, means a great deal."

Just then a silly Butterfly that had been trying his wings too soon, and nearly spoiled them by falling into a Spider's web, came to get himself repaired again. While Silvereen was joining the torn edges, and gorgeously repainting the defaced spots and stripes, Red Spider came in looking earnest and excited.

He said he had been taking a nap in a cozy nook under a Burdock leaf, when he was awakened by the clatter of a host of complaining insects and grubs, who had chosen this broad canopy in which to hold an indignation meeting. They were declaiming about what a miserable life they lead on account of the persecution of Man. They claim that he lives on the fat of the land—has plenty of food and just the kind he likes—and he begrudges them the little they can get by dint of boring and burrowing and secreting in their favorite haunts; and that he keeps up a ceaseless warfare upon them by the application of offensive washes and poisonous powders whenever it is possible to apply them. Before I left it had been moved and seconded that they form a league with the Wasp Borers, Wood Wasp, to riddle the timbers of his dwellings until they shall fall; and also with all stinging and poisonous insects that shall bite and sting him into madness.

"Now, I am sorry for these poor creatures, and believe we can be of some use to them, instead of spending all our time on what is more attractive and beautiful; and hence, I propose that we invite them to hold a picnic on our grounds, and let each one bring what he likes best and eat his meal in peace for once. What say my good fairies?"

They clapped their hands with delight.

"O, it would be just such fun! Such a comic sight to see so many ungainly, queer-looking creatures together! By all means ask as many as possible!"

So Red Spider went out and mollified them by inviting them to hold a grand international picnic in Fairy Land next day. Then he suggested to the fairies that they should decorate the grounds for the occasion with such plants as had been honored by being christened under the dews of heaven with the name of some animate creature. This they thought a capital idea, and so were busy as bees the rest of the day in making appropriate selections.

Thus they had in their collection the stately Tiger Lily, the Wolf's-bane, the Foxglove, Monkey-flower, Harebell, Horse Radish, Cowslip, Sheep-sorrel, Pigweed, Dog-fennel, Catnip, Mouse-ear, Gooseberry, Henbane, Chickweed, Rag-robin, Larkspur, Crowfoot, Eel-grass, Toad-flax, Spiderwort, and others.

The plants were placed appropriately, according to rank; Red Spider busied himself in engaging various kinds of water-craft with which to convey across the moat surrounding their grounds such of the party as were not provided with wings; and thus the busy day ended.

After retiring to their couches, and just as Silvereen was slipping off into dreamland, Goldinore remarked:

"You were out for a drive yesterday. You haven't told me about it."

"And what's more, I don't intend to. Let's go to sleep."

"I hope I am not to lose your confidence. You generally tell me of your pleasures and gay adventures."

"I had neither pleasure nor gay adventure. How did you get the news?"

"A Grand-daddy-long-legs came striding along in five minutes after you passed him and was the first to tell it. He called you a mad-cap, and said—"

"You needn't repeat his remarks. Who else mentioned it?"

"O, it was in everybody's mouth. But a Gad-fly seemed the busiest in circula—"

"There! there! that'll do! I'm going to sleep this minute!"

"I'm sorry that I men—"

"Hush!" —MRS. M. B. BUTLER.

ORIGIN OF THE POTATO.—The Potato was taken from North America to England by Sir WALTER RALEIGH, who found it in cultivation here, where it had been introduced by the Spanish from Peru. HUMBOLDT tried in vain to find the Potato, *Solanum tuberosum*, growing wild in Chili, New Grenada and Peru; but in 1822 some Scotch botanical travelers found it growing wild in Chili. Since then it has been found by others in various places in South America.

BOTANY FOR LITTLE FOLKS.

Of all the natural orders of plants none are more curious and interesting than the Orchidaceæ, or the plants of the Orchid family. The flowers are strikingly irregular in form, and nearly all of them require the aid of insects for their fertilization. Some of them are natives of the temperate zones, but many more are tropical. Some of them grow in the ground, but numberless species make their homes on trees and rocks, and apparently derive their sustenance from the air; hence, they are called air-plants. Some species are, perhaps, parasitic, deriving their sap from the plants upon which they grow.

Our engraving, figure 1, represents one of our hardy terrestrial Orchids, *Habenaria orbiculata*, that grows in the woods in many parts of our country.

The arrangement of the floral organs in sets of threes, as has been illustrated in the Lily family, is also exemplified in the Orchids, it being a feature common to most endogenous plants.

In the specimen of the *Habenaria*, or Greater Green Orchis, here shown, we perceive three external parts corresponding to a calyx; two of



Fig. 1. *Habenaria orbiculata*.

these parts are similar, while the third one is larger and broader than the others. The inner set of three parts, or petals, is also irregular, with two of the parts alike, and the third one longer and narrower; this prominent, front petal is called the labellum, or lip. The lip in many flowers is broad and frequently lobed, and almost always the most showily colored, although all the parts, sepals and petals, are alike in their general coloring. Behind and opening at the base of the lip is a long, hollow

spur, in which honey is secreted. The base of the flower, or the ovary, is seen behind the spur and is twisted. This feature of the ovary, once twisted, is a characteristic of Orchids, and it has the effect to change the position of the flower, as in our illustration; the lip, that is below the other petals, would be above them, if it were not for the torsion of the ovary, and the broad sepal, now uppermost, would be below.

The essential organs of Orchids are as peculiar as their other parts. In most genera there is but one developed stamen, although the rudiments of two others are often to be found. To give a better idea of the structure of these organs in the plant under consideration, they are drawn separately on a large scale at the right of the flower. This odd-looking body is composed of one stamen and a style and stigma. The base of the concave surface represents the style, and the upper part of the same surface, which is very sticky, is the stigma. The back or convex surface of the body corresponds to the filament, which is terminated on each side by a lobe of the anther. Each cell of the anther contains the pollen, and this pollen, instead of being numerous, separate grains, as commonly in other flowers, is a mass of grains united by minute elastic threads into a single club-shaped body with a long stem, at the base of which is a flat, circular disc, or face, that is very sticky. This pollen mass is called the pollinia, and is represented, enlarged, at the lower left hand side of the flower. If the disc or face at the base of the pollinia should be touched by any object, the finger, for instance, and then withdrawn, it will adhere to it, and the pollinia will be borne away. If, now, this pollen mass should be touched to the sticky stigma of another flower, that is, to the upper part of the concave surface of the central body, it would adhere to it and thus fertilize the flower.

It is now well known that the carrying of the pollinia from one flower to another is performed by insects, and the flowers of almost every species of the Orchid family are fertilized in this manner. The spur of the flower we are now considering is so long that it becomes only partly filled with honey, seldom more than the lower half of it. In order to extract this honey, it requires an insect with a long proboscis. It could not be done by bees or wasps. Butterflies and moths only are capable of doing it, and as scarcely a butterfly can be found with a proboscis long enough for the purpose, Dr. GRAY thinks that "one of the Sphinxes, or Night Moths, such as flock around the blossoms of the largest Evening Primroses at dusk, is the proper

helpmate of the Greater Green Orchis." Some of these Sphinxes have been caught with a pollen mass on each eye, an enlarged representation of which is given at figure 2. The side view shows the pollinia standing almost direct-

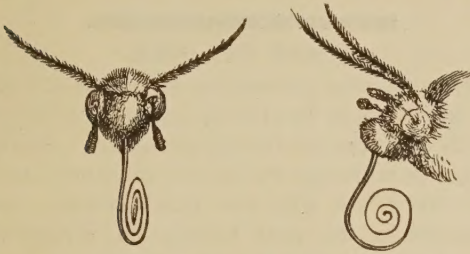


Fig. 2. Head of Night Moth.

ly forward, that being their position when first attached; after a very short time, the stems bend, and the masses hang down as seen in the front view. In this pendulous position the pollinia can readily come in contact with the broad stigma of the next flower the insect visits.

One of the most remarkable of these peculiarly wonderful flowers is a Madagascar Orchid called *Anagræcum sesquipedale*. It has a nectary nearly a foot in length. What a long proboscis an insect must have to take the honey from it! As no such insect was known when this species was disseminated, Dr. DARWIN inferred that one would be found that could reach into the long honey-spur and draw out the honey. Since that time, a German naturalist, FRITZ MUELLER, has found a species of moth in Southern Brazil with a proboscis ten or eleven inches in length, even when dried.

The description here given of the structure of *Habenaria orbiculata*, will convey a general idea of the peculiarities of these strange and beautiful flowers, but they are wonderfully varied, and each genus claims an attentive study.

One very interesting feature of some kinds of Orchids is the resemblance of the flowers to some kinds of insects. The Butterfly Orchis, *Oncidium papilio*, is an example of the kind referred to, the flower of which has almost the exact appearance of a gay-colored butterfly. Many others might be mentioned that imitate a variety of insects. Some are like moths, and others resemble bees and flies. Since nearly all the Orchids require the aid of insects to produce seed, it has been supposed that the flowers in insect form attract the insects they resemble and thus secure fertilization. On the other hand, among the few members of this family that are self-fertilized are the Bee Orchids and Fly Orchids; and the striking resemblance they bear to the insects they imitate has been accounted for by the supposition that it is for the purpose of driving away those insects. How

inscrutable are many of nature's ways, and yet to the careful, patient observer, one by one the mysteries are yielded up. Mr. DARWIN has given great attention to the subject of fertilizing Orchids by insect agency, and has written much that is valuable in reference to it. There is, however, here a field of rich promise to future investigators. Dr. J. E. TAYLOR, a most interesting writer upon subjects of natural history, in one of his works says: "The floral and staminal machinery of Orchids, and the various contrivances for causing the pollen of one plant to be carried to the stigmatic surfaces of another, when explained by such men as DARWIN, reads like a fairy tale. Nowhere else in the whole world of plants do we find adaptation so peculiar, or intention so manifest. Had the Orchids been highly rational and conscious beings, fully aware of the laws and relationships of biology, organic chemistry and mechanics, they could not have adapted themselves more admirably to their natural surroundings than as we everywhere find them! And when the entomology of each locality where Orchids are found is thoroughly known, there can be no doubt our cause for admiration will be increased than otherwise. Indeed, as regards the perfection of their floral machinery, we consider the Orchids at the head of the flowering plants."

The members of the Orchis family, natives of the United States, are terrestrial plants, and mostly grow in woods or other shady places, or



Fig. 3. Butterfly Orchis.

in bogs or low grounds. The Lady's Slipper, *Cypripedium*, many of us are familiar with. There are many species of it, one of which is white, and some are yellow. The most beautiful one is *C. spectabile*, or Showy Lady's Slip-

per, with a white lip shaded with pinkish purple. All the flowers of this genus have a large inflated lip, from the appearance of which is derived the common name of the flower. Another name for it is Moccasin Flower. Its Latin name, *Cypripedium*, is derived from two Greek words meaning Venus, and a sock or buskin, or Venus' Slipper.

We have a number of species of plants known as Fringed Orchis, and many of these are charming flowers. Most of them inhabit bogs, borders of ponds and moist thickets. Other beautiful flowers are those of the bog-plants, *Pogonia*, *Calopogon*, *Calypso*, &c.

The number of exotic species of Orchis in cultivation is very great, being not far from three thousand, and immense sums are spent in their care, as it is necessary that they should have houses specially devoted to them, where the temperature and atmosphere of their native countries are imitated. Few of all this vast number of plants are of any real use, and of these the Vanilla plant is the most prominent. There are several species of it that produce fruit yielding the aromatic oil, the essence of which is so much esteemed and generally used in flavoring ices, creams, chocolate, and other preparations. The plants are natives of the hottest and dampest regions of Mexico, Colombia, Guiana and tropical Africa. They have a trailing stem, and fasten themselves by rootlets at each joint to trees, and by these they often obtain nourishment when broken off from their ground roots. The leaves of this plant, not quite as large as those of the common Laurel, are produced alternately at every joint, six or eight inches apart. The stems break up into a great many branches, and these run over and fasten themselves upon the branches of small trees. The fruit is a fleshy capsule, about six inches long, with black, globose seeds. The seeds are enclosed in a special tissue that secretes the balsamic oil.

Other useful products are obtained from other members of the family, but they are comparatively few.

The name, Orchis, is the ancient name for the plant, and it has no popular English name. In some parts of England some native kinds are known as Crake-feet, and in other places as Keatlegs and Neatlegs, names given in allusion to their tuberous roots.

It is supposed they are alluded to by SHAKESPEARE in Hamlet, under the names, Long Purples, and Dead Men's Fingers, when the queen says:—

"Therewith fantastic garlands did she make
Of Crowflowers, Daises, Nettles and Long Purples,
That liberal shepherds give a grosser name,
But our cold maids do Dead Men's Fingers call them."

One of these names is used by TENNYSON in "A Dirge"—

"Round the blow, self-pleached deep,
Bramble Roses faint and pale,
And Long Purples of the dale."

A GOOD MAN GONE.

Since our last publication, we received a letter from ANSON BATEHAM, informing us of the death of "your old friend, my father." About forty-five years ago we became acquainted with Mr. BATEHAM, who was then a young man, engaged in the seed business in Rochester, afterwards in editing and publishing an agricultural paper. The labors of our friend were not, however, confined to business, for he was zealous in every good work. Many ladies whose hairs are now sprinkled with gray, will remember him as the instructor of a class in botany in a young ladies' seminary, for who can forget those pleasant and instructive Saturday strolls through the woods and meadows and over the hills. His pen never seemed to rest, and scarcely an agricultural or horticultural paper in the country but has been enriched by his contributions. It was always to us a great source of pleasure to receive Mr. BATEHAM as a guest when attending the Horticultural Association in this city, for he was a gentleman by nature and a scholar by acquirement. He never, we think, acquired wealth, for he was ever ready to do any amount of unpaid work; but while he may have lacked gold, he never lacked the honor and esteem of the wise and the good.

Mr. BATEHAM was born in the county of Kent, England, in 1813, and came to Rochester when a young man, where he resided for twenty years. He then removed to Columbus, Ohio, where he established the *Ohio Cultivator*, and was its editor for ten years. He was one of the organizers and the first secretary of the State Board of Agriculture; also of the Ohio Horticultural Society, and, we believe, was its secretary from its commencement until the day of his death. At his funeral the present secretary of the State Board of Agriculture, in speaking of his life work, truly said, "Not an orchard nor a grain-field in Ohio but has felt the influence of his labors."

Some ten years since Mr. BATEHAM removed to Painesville, Ohio, where he died. He has gone to his rest after a long life, full of years, none of which were wasted or misspent—full of labors that have blessed the world.

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